SEP 8 1943

Medical Library

BRITISH MEDICAL JOURNAL

JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

SATURDAY AUGUST 14 1943

TABLE OF CONTENTS

Experiences in Military Dermatology R. M. B. MacKenna, M.D. 191
Pepsin Inactivation in Ulcer Therapy A. Morton Gill, M.D., and C. A. Keele, M.D. 194
Precision Cephalometry and Pelvimetry Paul Cave, M.B. 196
Intramuscular Mepacrine: Histological Effect Frank Hawking, D.M. 198
Post-vaccinial Encephalomyelitis Samuel Dunn, M.D. 199

MEDICAL MEMORANDA

Kienböck's Disease: Aetiology. M. E. Gordon, M.B. 200
Urea for Migraine. J. A. Brown, M.D. 201

GENERAL ARTICLES AND NEWS

British Surgeons' Visit to U.S.S.R. 208
Future of Voluntary Hospitals 209
Antireticular Cytotoxic Serum. A. Bogomoletz, M.D. 203
Mouth Gag for Edentulous Patients. H. L. Thornton, M.R.C.S. 202
Mass Radiography Scheme 208
Queen's Institute Report on Midwifery Cases 203
Surveys of Hospital Services 209
The Services 218
Universities and Colleges 218
Medical Notes in Parliament 219
Medical News 220

LETTERS AND ANSWERS

Vaccines for Common Cold—Unilateral Parkinsonism—Mycotic Nails—Liver Extract, Intravenously—Lag Sugar Curve—Renal Function Tests—Tests for Hypogonadism—Doubtful Wassermann—Gonococcal Proctitis—Income Tax—Vitamin Therapy in Peptic Ulcer—Stilboestrol in Petit Mal—Supply of Prepared Bran 221–2

Epidemiology Section 220

LEADING ARTICLES

Sulphonamide Treatment 204
Pavlovian Physiology and War Neurosis 205

ANNOTATIONS

Caudal Anaesthesia in Obstetrics 205
The Haematologist's Herbal 206
Food and Health of Eskimos and Lapps 207
Respiratory Function of Digestive Tract 207

REVIEWS

Searchlight on the Cape 201
Degenerative Joint Disease 201
Regional Anatomy 202
Notes on Books 202

REPORTS OF SOCIETIES

Illuminating Engineering Society: Light and Vision 210

MEDICO-LEGAL

Spackman Decision: Appeal of G.M.C. Dismissed 217

SUPPLEMENT

Correspondence 23
Appointments under Local Authorities 24
H.M. Forces Appointments 24
Postgraduate News 24

CORRESPONDENCE

The Teaching of Ophthalmology. C. O. Hawthorne, M.D. 210
Childhood Infection and Adult Phthisis. D. J. Gair Johnston, M.B. 210
H 11 for Cancer. F. Curtis, F.R.C.S.; E. C. Lowe, M.B.; W. A. Steel, M.D. 211
Diabetic Retinitis. J. H. Doggart, F.R.C.S. 212
Globin Insulin. J. Trevan, M.B. 212
Orthopaedics of "Sentry Go." Sir G. Lenthal Cheatle, F.R.C.S. 213
Selective Action of Vitamin C on Suprarenals? W. H. Derham, M.B. 213
Psychiatry in General Hospitals. D. E. Sands, M.R.C.P.Ed.; Louis Minski, M.D.; G. L. Alexander, M.B. 213
Cult of Negative Health. J. Campbell, M.B. 214
Sulphonamide Therapy in Tuberculous Empyema. M. Crowe, F.R.C.P.I. ...214
Bovine Tuberculosis in S. Africa. W. C. J. Cooper, F.R.C.S.Ed. 214
Nurses' Pay and Hours. C. W. F. McKean, M.B. 214

OBITUARY

Sir Beckwith Whitehouse, F.R.C.S., F.R.C.O.G. 215
A. M. Barford, M.D. 216
D. C. M. MacPherson, M.B., D.T.M. ...216

BRITISH MEDICAL ASSOCIATION, TAVISTOCK SQUARE, LONDON, W.C.

No. 4310, WEEKLY, PRICE 1/6

Copyright

REGISTERED AS A NEWSPAPER

NOVUTOX PROCESS

NOW APPLIED TO THE PRODUCTION OF

SELF-STERILISING MORPHINE SOLUTIONS

The special Novutox cold sterilising process by which statrilized (i.e., stable and self-sterilising) solutions are prepared, offers for Morphine Therapy an advance which is outstanding compared with any other system.

Inconvenient tablet forms of morphine and other important narcotics, often of necessity prepared for injection with *water of doubtful character*, have been grudgingly tolerated by the Medical Profession for half a century.

The growing volume of emergency work associated with modern life, and especially with A.R.P. arrangements, demanded some improvement, and solutions of morphine in bottles, ampoules and the new cartridge form, ready for immediate use without further process of sterilisation, have at long last made their appearance.

To obviate possible confusion between Novutox Self Sterilising local anaesthetics and solutions of morphine produced by the Novutox Cold Sterilising Process, the description "STATRILIZED" (e.g., Statrilized Morphine ¼ gr.) has been applied to drugs other than Novutox Local Anaesthetics prepared by the process.

Solutions prepared by the process are :

● LESS TOXIC ● SELF-STERILISING ● STABLE ● READY FOR USE

● LESSENED TOXICITY : In particular cases, such as those with cardiac manifestations or when shock is accompanied by toxaemia (as in burn-shock) the advantages of lessened toxicity are very real.

● SELF STERILISING : Elimination of the danger of accidental infection renders the solution perfectly safe for use from rubber capped or glass stoppered bottles, even under the adverse conditions of A.R.P. and other emergency work. Moreover, additional to the safety factor this feature of the solution makes for extreme economy in use.

● STABLE : Any fear that the solution "will not keep" either due to the development of micro-organisms or to decomposition, is entirely abolished.

STATRILIZED DRUGS AT PRESENT AVAILABLE:

PHARMACEUTICAL MANUFACTURING CO., LTD.
THE LABORATORIES, CHELTENHAM, GLOS.

	Bottles 12 c.c.	Bottles 24 c.c.	Cartridges 20 × 1 c.c.	Ampoules 12 × 1 c.c.
Statrilized Morphine ¼ gr. per c.c.	3/4d.	4/6d.	9/-	4/9d.
,, ,, ⅓ gr. per c.c.	3/6d.	4/9d.	9/3d.	5/-
,, ,, ½ gr. per c.c.	4/-d.	5/6d.	10/6d.	5/9d.
Statrilized Morphine ¼ gr. per c.c. cum. Atropine 1/150th gr. per c.c.	3/11d.	5/4d.	10/4d.	5/7d.
Statrilized Morphine ¼ gr. Strychnine 1/60th gr. cum. Atropine 1/100th gr. per c.c.	3/11d.	5/4d.	10/4d.	5/7d.

For Hospital use 300 c.c. bottles are available.

Why ANDREWS *is the* Ideal Tonic Laxative

Andrews is a pleasant tasting, effervescent aperient with tonic properties, and is a valuable aid to Inner Cleanliness.

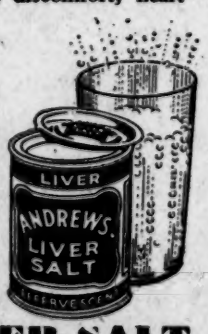
Andrews is beneficial in most digestive disorders, feverish conditions, the ailments of children, and in pregnancy and lactation. Its use may be discontinued without reaction when the need for it ceases.

Andrews justifies the description of "Ideal Tonic Laxative" because :—

FIRST . . Patients like taking Andrews, because its brisk effervescence is immediately refreshing and stimulating, it sweetens the mouth and helps to clean the tongue.

NEXT . . Andrews allays gastric discomfort, heartburn and nausea by diminishing the stomach's acidity and relieving flatulence.

THEN . . Andrews increases bile flow, relieves hepatic congestion, and improves digestion. It is partly absorbed from the intestine as alkali, and therefore helps to correct acidity in the blood and to stimulate kidney function.



FINALLY . . Acting by osmosis, Andrews clears the bowels gently and entirely without irritation.

ANDREWS LIVER SALT

SCOTT & TURNER LTD · ANDREWS HOUSE · NEWCASTLE-UPON-TYNE 2

M11

THE HOUSE OF MAW

The Premier House for Medical and Surgical Requisites

- CLINICAL THERMOMETERS
- HYPODERMIC SYRINGES
- ENEMAS AND SYRINGES
- INDIA-RUBBER PESSARIES
- ADHESIVE PLASTERS
- SURGICAL DRESSINGS
- SURGICAL INSTRUMENTS
- SURGICAL APPLIANCES
- TRUSSES AND BELTS
- DISPENSING REQUISITES
- PHARMACEUTICALS

Supplies of some items are limited but you can be assured of the utmost service under present conditions

WE INVITE YOUR ENQUIRIES

S. MAW, SON & SONS, LTD.,
ALDERSGATE HOUSE, NEW BARNET, HERTS.
Telephone - BARNET 5555 Telegrams - ELEVEN, BARNET

ESTABLISHED 1807

BRITISH MEDICAL JOURNAL

LONDON SATURDAY AUGUST 14 1943

EXPERIENCES IN MILITARY DERMATOLOGY*

BY

R. M. B. MacKENNA, M.A., M.D., F.R.C.P.

Brigadier; Consulting Dermatologist to the Army

So far as I have been able to ascertain, the best starting-point for this essay is July 23, 1903, for on that date the Advisory Board for Army Medical Services appointed a subcommittee of eminent men "to consider the question of the treatment of venereal diseases in the Army, and to inquire into the question of the treatment of itch." The chairman and the secretary of the subcommittee widened its terms of reference very considerably, and included in its purview "the arrangement and equipment of wards and hospitals for the treatment of certain" (unspecified) "skin diseases"; they summoned to its conferences most of the eminent British dermatologists of the day (including Radcliffe Crocker, Malcolm Morris, Jonathan Hutchinson, T. Colcott Fox, and Arthur Whitfield) and sent a representative to the leading civilian and military hospitals in France, Germany, Austria-Hungary, Italy, Russia, Sweden, Denmark, and Belgium. Eventually four large reports were published by His Majesty's Stationery Office,[1] and in the last of these, among many other recommendations, the subcommittee advised the segregation of skin cases in special sections of military hospitals, recommended that in these hospitals "in charge of sections for the treatment of venereal and skin diseases should be placed officers who have qualified as 'Specialists in Dermatology, including Venereal Diseases,'" and stated that it would be "of advantage to the service that junior officers intending to present themselves for examination in the subject of dermatology and venereal diseases when qualifying for promotion to major should be appointed to stations where wards for the treatment of these diseases exist under the charge of an officer with the 'Specialist' qualification."

It would have been reasonable to assume that with the backing of the subcommittee's findings and the blessing of the Advisory Board military dermatology would have forged ahead. But venereal maladies are a greater hazard than cutaneous diseases to a peacetime army of selected men, and the medical officer who desired to specialize in the latter found that, although nominally he was a dermatologist, the larger part of his clinical duties was the treatment of venereal disease.

In the South African War (1899-1902) skin diseases had been found to be one of the principal causes of inefficiency in the Army[2]; during this campaign the average annual incidence of skin diseases per thousand troops was 23.71—i.e., approximately half the battle casualties. In the war of 1914-18 skin diseases again became notorious because of the inefficiency they caused. In 1915, in the United Kingdom, 40.88 men in every thousand were admitted to hospital because of diseases of the skin and areolar tissue[3]; in France and Flanders in the same year the ratio was 126.13 in every thousand.[4] But despite the high incidence of skin diseases the dermatologists were singularly unsuccessful in leaving a permanent impression upon military administration. In the years of comparative tranquillity between 1918 and 1939, for the reason given previously, dermatology in the Army again became a specialty in which venereology was predominant.

The Early Days of the War

Of the first nine months of the present war I shall say little. The dermatological work which was carried out during this period in the B.E.F. in France (1939-40) has been recorded by Colonel J. T. Ingram.[5] For those of us who were on service in the United Kingdom it was probably the hardest and most difficult period to date. We who were working in England naturally and rightly did not have our indents for drugs and stores fulfilled until the B.E.F. were supplied. Not only were the shortages of drugs, syringes, etc., a matter of concern, but also we had many difficulties with personnel; for much of our time was spent in training men, many of whom had but little vocation for nursing, without assistance from sisters or from nursing orderlies. In the hospitals at home, no sooner had we trained a batch of men than they were swept away to other units, and the training of the next batch of raw recruits and inexperienced medical officers began. This difficulty with personnel has given us considerable trouble throughout the war. Much (but by no means all) of the work of a dermatologist in the Army must be done in military or general hospitals. It is the duty of the staffs of the former, and to a less degree of the staffs of the latter, to train personnel, and the shortage of man-power is such that it is very difficult to arrange for a cadre of N.C.O.s, trained nursing orderlies, or special treatment orderlies to remain in each hospital as a nucleus to assist in the training of each batch of newly enlisted men.

A New Establishment and a Policy

In Nov., 1941, largely as the result of the representations that were made by the Director of Hygiene (Major-Gen. D. T. Richardson) and Lieut.-Col. (now Brigadier) T. E. Osmond, R.A.M.C., and with the valuable support of members of the Consultants Committee, a new establishment was created in the Army Medical Department: Brigadier Osmond continued to be Adviser in Venereology, and I was appointed Adviser in Dermatology. It must be understood that the dermatologist who is War Office Adviser has not *carte blanche* to organize dermatology in the Army in accordance with his own fancies or the beliefs of his officers. It is his duty to weigh the merits of the policies he conceives or the proposals he receives, and then, if they involve major questions, so to marshal the facts and figures concerning these matters that he can present to higher authority a watertight and convincing case for their acceptance and adoption. Having received an acceptance in principle, he must then take the necessary steps to have the scheme implemented.

In Nov., 1941, my first duty was to formulate a comprehensive policy for dermatology in the Army. The following is an outline of this policy, so far as the work in the United Kingdom was concerned.

1. In each Command† there should be a Command Specialist in Dermatology: he should have the professional status of

* A paper read before the British Association of Dermatology and Syphilology on July 2, 1943.

† As is well known, for the purposes of military administration the United Kingdom is divided into several large Commands. For medical purposes the Command is the major administrative unit.

a consultant and should hold a higher diploma in medicine or surgery, but in a few cases in which ability in organization or in dermatology was recognized this academic standard might be waived.

2. So far as possible, military dermatology should be centralized in military hospitals.

3. Officers in medical charge of units should be instructed to send all difficult cases (without delay) to hospitals where dermatologists were available rather than to admit these cases to subsidiary medical centres where, because of lack of specialized knowledge or advice, the course of the disease might be prolonged.

(This item of policy, simple though it appears to be, was not put forward without much consideration; for it was a matter which affected the interests of many keen medical officers who would have preferred to keep these cases under their own care. But our criterion of therapy is that it must be carried out with the maximum speed compatible with efficiency, and it was obvious that the detailed knowledge of the specialist was more likely to ensure rapidity and efficiency than the efforts of a medical officer, however keen, who had no special knowledge of cutaneous diseases.)

4. Military dermatological centres should not be isolated units, but should be part of or attached to military or general hospitals.

5. The equipment—surgical, electrical, and pharmaceutical—should be of a standard comparable to that of the dermatological department of the average teaching hospital. In one centre in each command *x*-ray therapy should be available.

6. A scabies officer—a graded dermatologist—should be appointed in each Command.

A Memorandum embodying this policy was drafted; it contained, *inter alia*, reference to the dermatological education of medical officers, and reference to preventive dermatology and rehabilitation.

The justification for the policy submitted was that, if carried out, there would be a reduction in the loss of time and the wastage of man-power due to skin diseases, and certain economies in finance and material would be effected. All the proposals, except that for scabies officers—which was refused on the grounds of shortage of medical officers—were accepted in principle.

There followed visits to most military hospitals and many camp reception stations from the Moray Firth to Cornwall and from Londonderry to Canterbury. New establishments for a certain number of dermatologists had to be obtained; dermatologists had to be enlisted, passed through the depots, and posted to Commands. Additional bed accommodation had to be found. The details of the policy had to be explained in the Headquarters of Commands. Many E.M.S. hospitals were visited, and it is a pleasure to acknowledge my indebtedness to the executive and clinical officers of the E.M.S., who have always cordially smoothed my path.

In May, 1942, the Director-General E.M.S., having considered our plea for centralization of treatment, issued an Instruction directing that if a Service patient had been admitted to an E.M.S. hospital, and if cure had not resulted within three weeks from the date of admission, that patient should be transferred to one of the hospitals having special facilities for treating skin cases listed in Section XII of E.M.S. Instructions, Part I.[6]

Besides these administrative matters, items of clinical interest were dealt with. Two pamphlets—"Notes on the Prevention and Treatment of Scabies, 1942," and "Memorandum on Cutaneous Diseases, 1942"—were written, and published by command of the Army Council.

Implementing the Policy

In July, 1942, an order was promulgated implementing the first item of the policy outlined above: Command Specialists in Dermatology were nominated for all Commands in the United Kingdom, and their duties and responsibilities were defined as follows:

1. The Command Dermatologist is the adviser of the Deputy-Director of Medical Services of the Command in all matters concerning the prevention and treatment of skin diseases.

2. He is responsible for the treatment of skin diseases in the hospital to which he has been posted.

3. He is to visit, periodically, all military stations in the Command where skin diseases are treated and to report to the D.D.M.S. concerning the efficiency of these stations. (When properly carried out these visits are among the most valuable services which he renders.)

4. He is to advise and train medical officers in the principles of diagnosis and treatment of skin diseases. (In many skin centres teaching rounds are undertaken in the wards.) He is responsible for the training of orderlies and V.A.D.s.

5. He is to maintain cordial liaison with those E.M.S. hospitals where military dermatologists attend in a consultative capacity.

6. He has authority to delegate certain of his duties.

It will be seen from this schedule that the Command Specialist has heavy responsibilities. He is both the pivot and the mainspring of the system in the Commands. Once in every three or four months there is a Conference of Command Specialists in Dermatology at the War Office.

Grading

Thus far reference has been made to Advisers and Command Dermatologists without describing the hierarchy of dermatology in the Army; this omission must now be rectified. Besides Command Specialists and Advisers there are Specialists and Graded Specialists in Dermatology; also we have a few carefully chosen officers who are being trained in the specialty.

It may be of interest to specify the standards required of those who wish to be posted as "Graded Dermatologists" and "Specialists in Dermatology." A "Graded Specialist" should be in possession of higher medical qualifications. He should have been qualified in medicine for three years and employed in his specialty for at least one year. A "Specialist" must have the same qualifications as the "Graded Specialist," but with at least three more years' experience in his specialty; his age should be 32 years or over. Because of the pressure of the years we have had to reduce our standards, but the reduction has only been slight.

There is a general belief that military dermatology is a simple business. Certainly dermatology in the Army is simplified by two factors: first, we deal with persons of a selected age group; and, secondly, we deal with men and women who have been passed for service after a medical examination. But as the age limits widen and as, under the exigencies of war, the standards of physical fitness are relaxed, the scope of dermatology (as of other branches of medicine) widens proportionately, and we see a number of cases of unusual interest and difficulty.

Nursing

There is one important matter to which reference must be made, and that is to the assistance which the Matron-in-Chief, Q.A.I.M.N.S., Dame Katharine Jones, has readily given us on every occasion when we have sought her help. She, who once worked with Dr. H. G. Adamson, is anxious that every facility should be given for skin cases. On April 29, 1942, she signed a Memorandum on behalf of the Director-General, Army Medical Services, stating that matrons and sisters in charge should particularly interest themselves in skin wards, and whenever possible a sister should be posted to supervise the treatment of skin cases, "which should be regarded as an important branch of nursing duties." Since the issue of that Memorandum developments have occurred, and it is hoped that soon new establishments will be promulgated whereby sisters will be available to supervise nursing in the skin wards of all military hospitals. Dame Katharine is anxious that one of the good results of this war will be that in future the British soldier when suffering from skin diseases will be nursed in wards supervised by sisters.

Thus, briefly, are summarized the most salient advances in military dermatology which have occurred at home in recent months. There has been much else. We have recently launched a scheme on a small scale for the rehabilitation of men who have suffered from certain cutaneous diseases. This scheme, though no longer in embryo, is still in swaddling-clothes, and therefore will be mentioned without comment.

With regard to the Forces abroad, an adviser in Dermatology has been posted to the Persia–Iraq Force and another is serving in the Middle East. I have no intention of widening the scope of my remarks by reviewing the work of dermatologists in India, Persia, and Iraq, in Palestine, in Egypt and Libya, in North Africa, and in more remote parts of the globe: our colleagues will tell their own histories when they return, and theirs will be records of high endeavour and

success. It has been interesting to see how each dermatologist who has been commissioned has seized upon one particular facet of dermatology as being particularly his, and by disseminating his special learning has contributed greatly to our common knowledge.

Some Contributions of Note

Many clinical investigations and field trials have been undertaken; some contributions of value have been published in the medical press. Our observations have ranged from the bullous striate dermatitis which occasionally develops on those who lie down in green pastures, to methods of using "plastics" in the service of dermatology. Reference to the work (published or unpublished) of individual officers would be invidious, but as Major G. A. Hodgson's observations[7] on the incidence of scabies and its apparent dependence upon the incidence of subnormal intelligence have been criticized, I wish to make the following comment. From my own observations I believed that Major Hodgson was correct in his general view that the incidence of scabies was greater in troops of low mentality than in individuals more favoured mentally; but because of Hodgson's use of norms derived from R.A.M.C. recruits, it is possible that the figures obtained in this group were too high and consequently the number of cases which appeared to fall in the lowest intelligence group were exaggerated. The figures (see Table) supplied by Lieut.-Col. G. R. Hargreaves, R.A.M.C., after an investigation of the incidence of scabies in approximately 40,000 recruits suggest that while Hodgson's figures are an over-estimate of the relation between scabies and low intelligence, nevertheless a positive significant relationship does exist, particularly in the very lowest intelligence group.

Table showing Proportion of Scabietic Recruits of Different Intelligence Levels

Intelligence Grading	Scabietic Recruits	Strength of Intakes by S.G.s	Ratio
S.G. 1	21	3,945	0·5%
S.G. 2	65	6,983	0·9%
S.G. 3+	109	9,389	1·2%
S.G. 3−	89	8,346	1·1%
S.G. 4	123	6,565	1·9%
S.G. 5	46	2,102	2·2%
	453	37,330	1·1%

But, besides this flight into the *terra incognita* of psychosomatic tendencies, we have done much work on scabies, and we are proud of the enormous saving in transport, material, and finance which has resulted from the introduction of the treatment of scabies in units without segregation of the patients. From the administrative point of view it was a bold step for the Director of Hygiene to sanction this innovation, for had it not been successful the incidence of skin diseases would have soared; but, thanks to the careful work of unit medical officers, hygiene officers, and dermatologists, this innovation has been a success, and not only has there been a great saving in the material matters just mentioned, but there has also been much economy in that even more valuable factor, time.

All too often it has happened that the experiences gained in war have been forgotten in peace, and, before I conclude, there are some matters to which I must refer.

General Standard of Dermatology

In the Army not only is there a cross-section of the population—there is also a very fair sample of the graduates who have emerged from all the medical schools in the United Kingdom during the last 20 years; one is thus afforded a unique opportunity of assessing the general standard of medical knowledge attained by these men and women. In the Official History of the last war[8] it was stated that:

"The outstanding feature of this statistical review of diseases of the war . . . is the large number of men rendered ineffective by the simple ailments of everyday life, such as diseases of the respiratory and digestive systems, rheumatic fever and its allied conditions, local and general injuries, skin diseases, minor septic infections, and influenza. These disabilities . . . form the bulk of the illnesses suffered by the seven million insured people who apply for medical treatment every year. . . . The medical services both of the Army and of the civil population have here a common enemy and a common objective. Herein lies scope for research, rich in opportunity during peace, full of possibility for the future, and well worth constant investigation if preventive medicine is to reduce the admission rate to hospital at home and abroad, in peace and in war."

Without presuming to comment on the standards of medical education in any subject but that of our specialty, I feel it my duty to state that, in my opinion, the standard of dermatological knowledge of recently qualified medical men is not proportionate, as it should be, to the incidence of cutaneous diseases in both civil and military practice. It is not only the recently qualified medical men whose knowledge of cutaneous diseases could be improved with benefit to the community. The standard of many of their senior colleagues also leaves much to be desired. One can substantiate these statements in many ways: for example, Major K. Mellanby, R.A.M.C., has reported that in a sample of 1,000 successive cases sent for treatment to a scabies clinic 280 were not suffering from scabies. I do not accept this figure as having a general application throughout the Army, but I do agree with the implication of the statement—viz., that the error in the diagnosis of cutaneous diseases in general and of scabies in particular is much higher than it should be.

Both in war and in peace the loss of man-power days and working hours, the wastage (by misapplication) of drugs, and the amount of human misery caused by "trial and error" therapy based on uncertain diagnosis, are matters which should give the greatest concern to those responsible for planning medical education. These matters are not new; in 1904 Malcolm Morris[9] made the same plea for accuracy in elementary dermatological diagnosis. He referred particularly to the cases of dermatitis herpetiformis which he had seen and which previously had been repeatedly diagnosed and treated as scabies. That pitfall is still a successful trap to most medical officers to-day, and I submit that there is something fundamentally wrong in a system of education against which an indictment couched 40 years ago can justly be made.

It is worth considering whether or not the teaching of the acute infectious fevers should be linked more closely with the teaching of dermatology, for in many of these fevers the diagnosis is primarily made on the appearance of an eruption, and the clinician makes his diagnosis by paths of thought and trends of observation which are particularly dermatological. I do not advocate that we should incorporate in our specialty the treatment of infectious diseases. All I suggest is that, in teaching, there should be a closer liaison than at present exists between the expert in fevers and the expert in skin diseases. By this means the standards in both these specialties would be raised.

The quotation[8] given earlier from the Official History of the last war concerning the relevant incidence of diseases both in war and in peace confirms, to some degree, my disbelief in the story that skin diseases are statistically predominant only in war. I doubt very much if the proportional incidence of, for example, respiratory and cutanous diseases differs greatly in war and in peace. My contention is that skin diseases are statistically and economically of great importance in peace; but the facilities for their treatment are relatively limited even in many of our larger cities, and the public rely to such a degree on patent medicines, preparations obtained from quacks, or self-prescribed remedies purchased from chemists that an enormous number of cases of skin disease are never seen by the medical profession. It may be said that this does not matter—that the majority of people are eventually cured by these methods. Even if this very debatable statement is accepted as true, it does matter, because we are squandering our pharmaceutical resources in making tons of remedies each year, many hundredweights of which are misapplied or wastefully used; further, by faulty treatment the period of cure is prolonged, working hours are lost, and diseases are disseminated.

The traditional system of treating the majority of skin patients as out-patients can be, and often is, incredibly wasteful in drugs and dressings; it can also be inefficient and time-consuming. I believe that a statistical survey would indicate that at least 5% of the available hospital beds in the country should be earmarked in peace for dermatology, and it may well be that a higher percentage than this is really necessary.

The Advancement of Dermatology

With regard to the specialty itself, and to those who practise it, the lack of a Diploma in Dermatology is a serious handicap to the advancement of the subject. Holders of special diplomas are essentially men whose competence has been assessed by others than their own teachers. Even allowing for the faults inherent in an examination system, one usually finds that the majority of men who have achieved a difficult diploma are men of worth. In these highly competitive days when most specialties in medicine and surgery have their diplomas, there is considerable danger lest the poorer quality of man is attracted to a specialty which demands no particular hall-mark of intensive effort. The establishment of a diploma would not benefit only the diplomates—it would tend to standardize, and thus to improve, the nomenclature of our subject, to crystallize our views on therapy, and very materially to increase the standards of teaching of dermatology.

It is desirable that we should develop much greater facilities than at present exist for research. At the present time, when the methods of research are becoming more and more specialized and the technicalities of mathematical assessment are becoming increasingly important, there is danger lest we be outstripped in research in our own specialty by scientists who have had little or no dermatological training. There are problems of preventive dermatology which must be solved—problems in rehabilitation which must be met. In these fields we can make rapid progress, particularly if we collaborate with our colleagues in physical medicine, pharmacology, chemistry, and psychology.

Points Relevant to the Army

Finally there are three points relevant to the Army to which I must refer. When the time comes for us to shed the bright panoply of war the measure of our success—or failure—in our present effort will be the effect which our work has had in influencing the military medical strategy of the future. Very sincerely do we hope that we will have succeeded in ensuring three matters:

1. That in times of peace dermatology is not swamped by venereology, and that a permanent cadre, small though it will be, of medical officers will keep alight the torch of dermatology.

2. That from the outset of any future campaign it will be remembered that skin diseases are a vital cause of inefficiency and that full provision will be made both at home and abroad for dermatological services, proportionate in size and efficiency to the problems which will assuredly arise.

3. That, with the help of the Matron-in-Chief, the British soldier suffering from a cutaneous disease receives treatment in wards in which the nursing is supervised by sisters.

We, the dermatologists in the Army, owe much to many officers of high and low rank who have helped to smooth our way; it would be an impossible task to name them all, as one would like to do; but to three officers of the higher executive we are greatly indebted—first, to the Director-General, Army Medical Services (Lieut.-Gen. Sir Alexander Hood), who has always appreciated the significance of our work, and done much both at home and abroad to ensure that our contribution to the war effort was utilized to the full; secondly, to the Director of Hygiene, Major-Gen. D. T. Richardson, who has given daily attention to our problems, and on whose staff I had the honour to serve; and, thirdly, to the Consultant in Venereology (Brigadier T. E. Osmond), who, with General Richardson, was largely responsible for ensuring that dermatology and venereology went their separate but harmonious ways, and that we too had the full recognition of War Office representation.

REFERENCES

1 Advisory Board for Army Medical Services (1904). *The Treatment of Venereal Diseases and Scabies in the Army*, Reports 1–4, H.M.S.O., London.
2 *Official History of the Great War* (1931). *Medical Services: Casualties and Medical Statistics*, p. 272, London.
3 Ibid., p. 61.
4 Ibid., p. 143.
5 Ingram, J. T. (1942). *Brit. J. Derm. Syph.*, **54**, 223.
6 E.M.S. Instructions, Part I, Supplement 36 (E.M.S. 45/46), May 5, 1942.
7 Hodgson, G. A. (1941). *British Medical Journal*, **1**, 316.
8 *Official History of the Great War* (1931). *Medical Services: Casualties and Medical Statistics*, p. 59, London.
9 Morris, M. (1904). Advisory Board for Army Medical Services: *The Treatment of Venereal Diseases and Scabies in the Army*, 2nd Report, p. 69, H.M.S.O., London.

PEPSIN INACTIVATION IN ULCER THERAPY

BY

A. MORTON GILL, M.D., M.R.C.P.

Research Assistant in Department of Physiology and Courtauld Research Ward, Middlesex Hospital

AND

C. A. KEELE, M.D., M.R.C.P.

Lecturer in Pharmacology, Middlesex Hospital Medical School

The treatment of peptic ulcer is largely based on methods designed to neutralize the free HCl of gastric juice, so it is important to understand, first, what degree of neutralization is required, and, secondly, how successful modern treatment is in achieving this end. Neutralization is commonly thought to mean complete neutralization to *p*H 7, but in practice this is very difficult to produce, and dangerous owing to the considerable risk of alkalosis.

In order to understand the purpose of neutralization of gastric free acid it must be realized that its chief function is to create the required medium for the action of the proteolytic enzyme pepsin, which initiates digestion of proteins. The activity of pepsin is greatest at *p*H 1–2—the value in pure gastric juice—and this activity is abolished probably at *p*H 3.5 and certainly at *p*H 5 (Hollander, 1939). Now the normal gastric mucosa is resistant to digestion by its own gastric juice, but an ulcerated gastric mucosa, and probably also the intact mucosa of the small intestine, are susceptible to peptic digestion when the required *p*H is present, as has often been demonstrated in experimental work on ulcer production. This has recently been well shown by Schiffrin and Warren (1942), who perfused loops of cat's small intestine (including duodenum) for 12 hours with N/10 HCl, which damaged the mucosa very little, but when pepsin was added to the perfusing fluid extensive ulceration, bleeding, and perforations of the gut were seen. It was further shown that at *p*H 2.24 pepsin had no such effects and that the maximum destruction occurred at *p*H 1.10. Similar effects on the gastric mucosa were obtained in chronic experiments when the stomach was perfused through a fistula. From these experiments in cats it is seen that even N/10 HCl has little harmful action *per se*, and that relatively slight neutralization is necessary to reduce peptic activity. There is certainly no evidence to show that a *p*H of 3–4 is by itself capable of damaging an intact or ulcerated mucosa in animals or man, and *p*H values of over 4 would appear to be unnecessary in counteracting the activity of pepsin.

The common method of measuring the acidity of gastric juice is to determine the volume of N/10 NaOH required to neutralize 100 c.cm. of gastric contents, using Toepfer's reagent, which changes colour at *p*H 3–4, to measure "free acid," and phenolphthalein, which becomes coloured at *p*H 8–10, to measure "total acid"; other indicators are occasionally employed. Toepfer's reagent is not very accurate with opaque fluids, but it does indicate a *p*H change at about the desired value, and the *p*H of the sample can be roughly estimated from the amount of N/10 NaOH required to change the colour. If the sample does not give a red colour to Toepfer's reagent it may be assumed that peptic activity is negligible. Total acid values give no useful information.

*p*H values of gastric contents have also been studied by electrometric determinations on samples aspirated from the stomach—a much more accurate technique than the indicator methods; and recently the preparation of electrodes suitable for direct insertion into the stomach has provided a method for continuous recording of *p*H *in situ*.

Our purpose in this paper is to emphasize that inactivation of pepsin is the aim of peptic ulcer therapy and that this is obtained by neutralization to *p*H 3.5–4, and we shall consider how effective the usual method of treatment by milk and antacids is in fulfilling this aim.

Effects of Milk on Free HCl in Gastric Juice

Milk is the basis of the dietetic treatment of peptic ulcer, so its actions are very important. Freezer, Gibson, and Matthews (1928) showed that milk can neutralize an equal

volume of 0.3% HCl to *p*H 4, so the amount of milk in an ulcer diet would theoretically deal with the total quantity of acid secreted daily, provided the milk is given at the right times. Hurst (1928) noted that milk neutralized more effectively than carbohydrate feeds, and that hourly feeds were more effective than two-hourly. We have made observations on ulcer patients in whom a Ryle's tube, introduced via the nose,

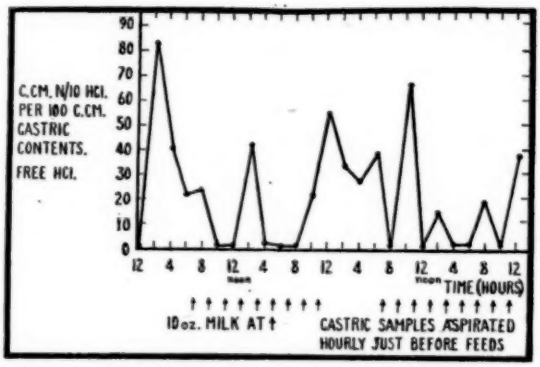

C.CM. N/10 HCl. PER 100 C.CM. GASTRIC CONTENTS. FREE HCl.
TIME (HOURS)
10 oz. MILK AT
CASTRIC SAMPLES ASPIRATED HOURLY JUST BEFORE FEEDS

FIG. 1.—Patient No. 1: 10 oz. of milk two-hourly.

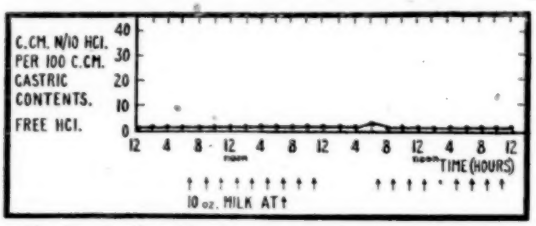


Fig. 2.—Patient No. 2: 10 oz. of milk two-hourly.

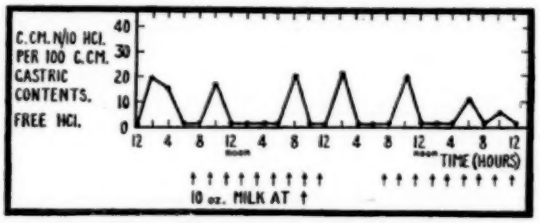


FIG. 3.—Patient No. 3: 10 oz. of milk two-hourly.

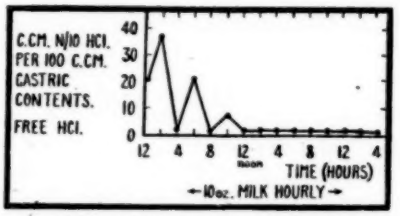


FIG. 4.—Patient No. 1: 10 oz. of milk hourly.

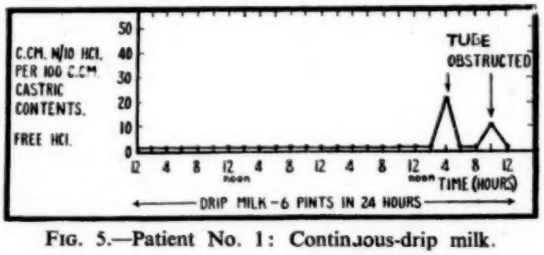


FIG. 5.—Patient No. 1: Continuous-drip milk.

was retained for several days, and samples of gastric contents were removed hourly, day and night, just before a feed. Free acid values were determined, using Toepfer's reagent as indicator.

10 oz. of Milk Two-hourly.—There are considerable individual variations in response to milk, and Figs. 1, 2, and 3 show free acid values in 3 patients with gastric ulcer, which radiographs and gastroscopy showed to be of similar size and location, when 10 oz. of milk was given two-hourly.

10 oz. of Milk Hourly.—The patient whose response to 10 oz. of milk two-hourly is shown in Fig. 1 showed complete neutralization of free HCl on hourly feeds of 10 oz. of milk (Fig. 4). Other patients have shown proportional reductions of free acid levels.

Continuous-drip Milk (6 Pints in 24 Hours).—This method of administration was introduced by Winkelstein (1933), and has the great advantage of being effective by night as well as by day. Fig. 5 illustrates this point in the same patient as above. The obvious disadvantage of this procedure is the continuous presence of the tube in the stomach, but we have found that if the tube is passed intranasally and removed every other day for cleaning the discomfort is reduced to a minimum. Breuhaus and Eyerly (1941) found that 3 oz. of milk half-hourly raised the *p*H to 2.4–2.9 and was superior to magnesium trisilicate, $Al(OH)_3$, and $NaHCO_3$ given in doses which were roughly equal to milk in neutralizing capacity *in vitro*. Cornell, Hollander, and Winkelstein (1942) have shown that a continuous $NaHCO_3$-milk drip keeps the *p*H of gastric contents about 4 (control *p*H 1.2–1.5) and is somewhat better than continuous $Al(OH)_3$ drip, which produces a *p*H of about 3.5. Wosika (1938) has suggested that powdered skimmed-milk tablets are more effective than liquid milk or cream.

Mode of Neutralizing Action of Milk

Milk contains several substances which may influence gastric secretion. The fat is probably the most powerful constituent, and its inhibitory effect on gastric secretion has been frequently confirmed since the original observations of Ewald and Boas (1886). Fat inhibits gastric movements and secretion when it reaches the duodenum, and fatty acids are far more active than the fats from which they are derived (Card, 1941). It has been demonstrated by Ivy (1937) that the action of fats is due to the liberation in the intestinal mucosa of a substance called enterogastrone, which in turn inhibits the movements and secretion of the stomach. Sugars in high concentrations also inhibit gastric secretion and mobility, and it has been shown by Day and Komarov (1939) that glucose acts partly after absorption by a central action due to the rise of blood sugar, and partly by a peripheral, probably osmotic, action. We have found that glucose, cane sugar, and lactose inhibit gastric secretion in man, but the effective concentration of the last-named is about 12.5% as against the 4% present in milk, so it is unlikely that the neutralizing action of milk owes much to its lactose content.

Proteins of course act as buffering agents, but some proteins can stimulate gastric secretion, probably through their breakdown products. We found that 20 g. of egg albumen hourly greatly increased free acid secretion in man, but Matzner, Windwer, Gawron, and Sobel (1941) showed that gelatin reduced the free acid response to histamine. Levy and Siler (1942) have found that a solution of amino-acids obtained by hydrolysis of casein (amigen) maintained the *p*H of gastric contents above 3.5 for half an hour after oral administration to normal subjects. The calcium present in milk will also neutralize free HCl.

Thus the inhibitory effect of milk is due partly to depression of secretion and partly to neutralization, and if given in quantities greater than 5 oz. hourly milk is undoubtedly an efficient therapeutic neutralizing agent; but in most cases something more will be required to raise the *p*H to 4, so antacids must now be considered.

Gastric Antacids

Antacids are almost invariably used to supplement the neutralizing action of milk. Their efficiency has been tested by measuring their neutralization of free HCl *in vitro*, but more useful information can be obtained by studying the reaction of gastric contents after oral administration of antacids. Direct electrometric measurements of *p*H are more informative than indicator studies, and have been used by Kirsner and Palmer (1940) and Breuhaus and Eyerly (1941) on aspirated samples of gastric contents, and by Flexner and Kniazuk (1941) and Breuhaus and Eyerly (1941) in the study of gastric *p*H *in situ*, in the dog and man respectively. In this way all grades of neutralization may be accurately measured, and continuous recording is possible with the electrodes in the stomach.

Kirsner and Palmer (1940) and Kirsner (1941) recorded the *p*H of aspirated gastric samples at hourly intervals in patients with healing duodenal ulcer who were given hourly feeds of milk and cream plus antacids hourly midway between the milk feeds. The gastric contents were aspirated just before each feed—i.e., half an hour after the antacid was given. They found that milk and cream feeds alone (3 oz. total volume, made up of equal parts) had no effect after one hour, although others have found that larger volumes or more frequent feeds were very effective, as described above. A general diet raised the *p*H somewhat.

A number of antacids in various doses, and atropine, were tested. 2 g. $CaCO_3$ hourly raised the *p*H from 1.75 to 4.35, 2 g. magnesium carbonate from *p*H 1.9 to 5.1, 2 g. magnesium trisilicate from *p*H 1.95 to 2.57, 2 g. $Ca_3(PO_4)_2$ from *p*H 1.75 to 2.61, 2 g. $Mg_3(PO_4)_2$ from *p*H 1.65 to 3.06, and 30 c.cm. (1 fl. oz.) $Al(OH)_3$ from *p*H 1.9 to 3.0. Atropine enhanced the action of $CaCO_3$ but had little effect on the other drugs.

The order of efficiency of drugs acting alone in equal (2-g.) doses was: (1) calcium carbonate; (2) magnesium carbonate; (3) tribasic magnesium phosphate; (4) tribasic calcium phosphate; (5) magnesium trisilicate. 30 c.cm. (1 fl. oz.) of 5% colloidal aluminium hydroxide is probably little inferior to calcium and magnesium carbonates.

Breuhaus and Eyerly (1941) studied the effects of antacids in man by recording the intragastric *p*H at 5-minute intervals for two hours. $Ca_3(PO_4)_2$, $Mg_3(PO_4)_2$, and $CaCO_3$ in doses of 1–1.3 g. raised the *p*H more effectively than 1.3 g. of $NaHCO_3$, 10 c.cm. of colloidal $Al(OH)_3$, or 0.65 g. of $Mg_2Si_3O_8$, and the effects were not necessarily proportional to the neutralizing capacity *in vitro*. This was particularly well shown when mucin was compared with the tribasic powders or $CaCO_3$: 10 g. of mucin *in vitro* neutralized as much acid as 1 g. $CaCO_3$ or $Mg_3(PO_4)_2$, but in the stomach mucin was much less efficient than either of the salts. This was probably due to the inadequate distribution of the mucin in the stomach—obviously a question of prime importance. It was also shown that 90 c.cm. of milk half-hourly was inferior only to the tribasic powders and $CaCO_3$.

Bennett and Gill (1939) have demonstrated the efficiency of colloidal aluminium hydroxide in patients with peptic ulcer (see Fig. 6). Suggestions have also been made by Schiffrin and

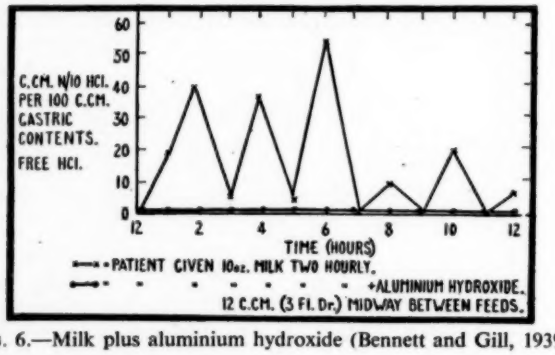


FIG. 6.—Milk plus aluminium hydroxide (Bennett and Gill, 1939).

Komarov (1941) that aluminium hydroxide and phosphate inactivate pepsin even at *p*H 1–2, but their work has been criticized on technical grounds by Schoch and Fogelson (1942).

It is unlikely that methods of treatment in which two-hourly milk feeds are given, with antacids halfway between, would be as efficient in neutralizing free HCl as the hourly administrations of Kirsner and Palmer; so a *p*H of 4 will probably not be reached for very long, and at night there will be no neutralization on either regime. Since the majority of peptic ulcers heal readily it may well be that complete inactivation of pepsin is unnecessary and that a *p*H of 2–3 will cause sufficient reduction of proteolytic activity. We do not know the answer to this question, but if an ulcer does not heal it is important to determine free HCl or *p*H levels of gastric contents to see how much neutralization has occurred. We have seen cases in which free acid levels increased when antacids were added to a two-hourly milk-feed regime, and such patients would probably require continuous drips of milk or colloidal $Al(OH)_3$ to control free HCl levels adequately.

Summary

The immediate aim of peptic ulcer therapy is to inactivate the pepsin of gastric juice by raising the *p*H of gastric contents to 3.5–4. Neutralization to *p*H 7 is unnecessary, and may easily produce alkalosis.

Milk, magnesium carbonate, calcium carbonate, tribasic magnesium and calcium phosphates, colloidal aluminium hydroxide, and magnesium trisilicate are the most efficient and safe neutralizing agents.

Our own observations were made on patients in the Courtauld Research Ward of the Middlesex Hospital before the war, and we are grateful to Dr. T. Izod Bennett for permission to study his patients. We should like to thank Prof. Samson Wright for his advice and criticism.

REFERENCES

Bennett, T. I., and Gill, A. M. (1939). *Lancet*, **1**, 500.
Breuhaus, H. C., and Eyerly, J. B. (1941). *Ann. intern. Med.*, **14**, 2285.
Card, W. I. (1941). *Amer. J. digest. Dis.*, **8**, 47.
Cornell, A., Hollander, F., and Winkelstein, A. (1942). Ibid., **9**, 332.
Day, J. J., and Komarov, S. A. (1939). Ibid., **6**, 169.
Ewald, C. A., and Boas, J. (1886). *Arch. Path. Anat.*, **104**, 271.
Flexner, J., and Kniazuk, M. (1941). *Amer. J. digest. Dis.*, **8**, 45.
Freezer, C. R. E., Gibson, C. S., and Matthews, E. (1928). *Guy's Hosp. Rep.*, **78**, 191.
Hollander, F. (1939). *Amer. J. digest. Dis.*, **6**, 127.
Hurst, A. F. (1928). *British Medical Journal*, **2**, 779.
Ivy, A. C. (1937). *Cold Spring Harbor Symposium*, **5**, 405.
Kirsner, J. B. (1941). *Amer. J. digest. Dis.*, **8**, 53.
—— and Palmer, W. L. (1940). Ibid., **7**, 85.
Levy, J. S., and Siler, K. A. (1942). Ibid., **9**, 354.
Matzner, M. J., Windwer, C., Gawron, O., and Sobel, A. E. (1941). *J. lab. clin. Med.*, **26**, 682.
Schiffrin, M. J., and Komarov, S. A. (1941). *Amer. J. digest. Dis.*, **8**, 215.
—— and Warren, A. A. (1942). Ibid., **9**, 205.
Schoch, D., and Fogelson, S. J. (1942). *Proc. Soc. exp. Biol.*, N.Y., **50**, 304.
Winkelstein, A. (1933). *Amer. J. med. Sci.*, **185**, 695.
Wosika, P. H. (1938). Ibid., **195**, 676.

A PRECISION METHOD OF CEPHALOMETRY AND PELVIMETRY

BY

PAUL CAVE, M.B., B.S., D.M.R.E.

No method of cephalometry in common use hitherto can claim to be a method of precision. Each is based upon a preliminary estimate (not upon exact measurement) of the height of the "greatest circular section" of the skull above the film. Measurements based upon estimates can never be consistently accurate. The essential features of the various methods are as follows:

Reece (1935) palpates the head, makes allowance for the thickness of the abdominal wall, and adds 2 in. to the tube-skull distance. Thoms (1927) estimates the height and inclination of the occipito-frontal diameter with the patient in the supine position, and after exposure of the film makes another exposure with a perforated lead strip placed above the couch at the height and in the plane of the occipito-frontal diameter. Rowden (1935) measures the foetal skull with the patient in the sitting position, using cephalic scale strips placed at the estimated level of the foetal skull. Walton (1931) and McDonogh (1935) take lateral views of the patient lying either prone or supine with lead marks or a graduated lead rule at right angles to the couch in order to determine the height of the skull above the film. Roberts (1935) examines the patient in the prone position without using a Potter-Bucky diaphragm, and measures the suboccipito-bregmatic diameter on the basis that at term the true diameter of 3¼ in. results in a film diameter of 4 in. Chassar Moir (1941) uses a lateral view with the tube at 5-ft. distance and with a scale interposed at the mid-plane of the pelvis. He claims that this gives a fairly accurate guide to the size of the foetal head in about 75% of cases.

It is obvious that in all these methods there is a margin of possible error. For instance, the thickness of the abdominal wall can be estimated but it cannot be measured. The taking of a lateral film in breech cases does not definitely establish the depth of the foetal skull, as the foetus may have moved in the interval between the exposure of the A.-P. and lateral views. A serious disadvantage of these methods is that they require the whole-time supervision of a radiologist. No radiologist should be expected to take the responsibility of calculating the size of a foetal skull from factors not estimated by him personally. These are some of the reasons why

cephalometric results are viewed with reserve by obstetricians and radiologists alike.

The method to be described is a modification of one recorded by Portes and Blanche (1924a, 1924b). It derives its accuracy from the fact that the distance of the foetal skull from the film can be ignored. It can be applied with the patient in any position—A.-P., P.-A., lateral, sitting, standing, prone, or supine. The films can be taken by a radiographer in the absence of the radiologist, and the latter can make his calculations with the knowledge that (except from gross carelessness on the part of the radiographer) the results will be accurate.

Technique

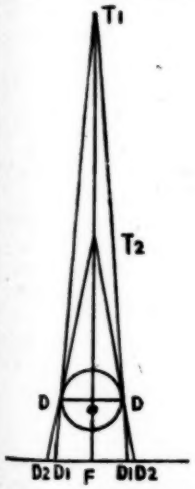
An exposure is made with the tube centred over the foetal skull, at a known tube–film distance. Then a second exposure is made with the same centring, but with a different known tube–film distance. The two exposures may be made on one film, or, if preferred, a separate film used for each exposure. The technique is simple and rapid. The resultant film images are measured and applied in a simple formula (Formula 1), which gives the actual length of the diameter under consideration.

For simplicity in working out the formula, it is recommended that the tube–film distance (X and Y) should be simple numbers. I use 60 in. and 30 in., but other combinations such as 50 and 25 or 50 and 30 are equally effective. The choice of these distances depends partly on the power of the apparatus and partly on the facilities for moving the tube away from the film. With the patient lying or sitting, the tube is moved vertically. If the patient stands, the tube is moved horizontally.

Those who wish to test the accuracy of this method before applying it in practice should make the following experiment with an egg as the object for measurement:

Support the egg on a cardboard box placed on the radiographic couch. Centre the tube accurately over the egg with a small plumb-bob suspended from the centre of the tube aperture, and make an exposure with the tube, say, 40 in. above the film in the Potter-Bucky tray. Lower the tube to 20 in. and make a second exposure on the same film. After development measure the "greatest circular section" of both images and apply the formula to obtain the true diameter. Having done this, apply the second formula (Formula 2) $OF = Y - \frac{(DD \times Y)}{D_2D_2}$, which will give the height of the centre of the egg above the film. Then check the results by direct measurement.

In cephalometry, the biparietal diameter is the most important. Next come the suboccipito-bregmatic and occipito-frontal. No film should be accepted for measurement which



T_1F (X) = Long tube–film distance
T_2F (Y) = Short tube–film distance
$T_1F - T_2F$ (Z) = Difference of tube–film distances
DD = True diameter (to be measured)
D_1D_1 = Short image of diameter
D_2D_2 = Long image of diameter
OF = Object–film distance

Formula 1: $DD = \frac{D_1D_1 \times D_2D_2 \times Z}{(D_2D_2 \times X) - (D_1D_1 \times Y)}$

Formula 2: $OF = Y - \frac{(DD \times Y)}{D_2D_2}$

does not show clearly one of these diameters, else a source of error will be introduced. The following procedure is recommended for routine examination:

Take an A.-P. view with the patient supine. If the position is a vertex take a vertical view through the pelvic brim with the patient in the sitting position. There is no need to ensure that the plane of the true conjugate is parallel with the film. The tube–film distances must be known, and should be recorded on the film before processing. A small lead plumb-bob should be suspended from the centre of the tube aperture during the exposure. Lower the tube to a second known distance and make another exposure on a second film. Examine the films after processing and make sure that the shadow of the plumb-bob is over the same part of the foetal skull in each film, and that one of the essential diameters is clearly seen. This is all that will be required before measurement when the films are dry.

If the preliminary A.-P. view shows that the position is a breech, note the position and orientation of the foetal skull and decide whether the examination can be continued with the patient supine, or whether a better view will be obtained with the patient in the lateral position. In either event the plumb-bob should be centred over the foetal skull and two separate exposures made. Thus, three films (one 15 × 12 in. and two 12 × 10 in.) are required in the average case, unless technical errors in exposure or in centring call for repeats. The length of each exposure differs, of course, in relation to the height of the tube.

Pelvimetry

The method can be applied to obtain any transverse diameter of the inlet or outlet irrespective of its height above the film. There is no need to ensure that the conjugate diameter is parallel with the film. Each pair of films taken in the sitting, prone, or supine position will give data sufficient for measuring accurately the transverse diameter of the brim and the interspinous diameter, in spite of the fact that these diameters are on different planes. Both the intertuberous and the interspinous diameters can be measured from the pair of films taken in the supine position. The intertuberous diameter cannot be measured in the films taken with the patient sitting, as the ischial tuberosities are obscured by the pubic bones.

When taking films for transverse measurements it is essential that the pelvis should not be tilted to one side. In other words, the plane or planes that are being measured must be parallel with the film. The method, if applied to measurement of the diagonal conjugates, must be done with the patient sitting. The true conjugate is better measured with a single film in a lateral view, the patient standing with a metal scale placed between the thighs. In the A.-P. view in the sitting position, the upper anterior border of the sacrum is sometimes difficult to identify. In vertex cases it is often possible to measure the foetal skull, the transverse diameter of the pelvic brim, and the interspinous diameter from data supplied by a pair of 10 × 12-in. films.

In its application to pelvimetry this method has a certain resemblance to that devised by Hastings (1942), who uses a double exposure with a 3-in. horizontal shift. It differs, however, in this important respect: that whereas Hastings first determines the height of the diameter to be measured above the film and then proceeds to its measurement, with my method the true measurement is obtained direct.

Measurement of the transverse diameter by this method is simpler and more accurate than when measurement is based on the height of the symphysis pubis from the film: simpler because there is no need to palpate the symphysis, or to adjust its height so that it is level with the sacral promontory; more accurate because the transverse diameter is at a lower level than the true conjugate. The difference in height may be as much as two inches. In experiments on a dried pelvis I found an appreciable error in measuring the transverse diameter by Thoms's method, owing to the different levels of the true conjugate and transverse diameters in this particular pelvis. With the new method such errors are impossible and the patient's comfort is increased.

The following example illustrates the simple sum involved in calculating a diameter:

The tube–film distances = 30 and 60 in.
The short and long images = 4.8 and 5.3 in.
Then (by Formula 1) the true diameter $= \frac{4.8 \times 5.3 \times 30}{(5.3 \times 60) - (4.8 \times 30)}$
$= \frac{763}{174} = 4.4$ in.

Other Uses of the Method

The method can be employed to obtain exact measurements of any opaque circular or oval objects in the body and their depth from the surface. Irregularly shaped objects may require

several separate examinations with the patient rotated in oblique positions in order to bring each diameter in turn parallel with the film. Linear objects can be measured provided that they are parallel with the film.

The calculation of the size of the tumour or cavity in the lung and its depth from any part of the chest wall is a simple matter. A double exposure on one film will suffice, or two separate films may be taken if preferred. The method can be used as a check on tomography. The size and depth of opaque cerebral tumours could be determined in a similar manner. The dimensions of a vesical or biliary calculus, or other opaque object, could be determined and compared with its dimensions at a subsequent examination. The results would be comparable even though the position of the object had changed. No doubt other applications of this method will present themselves.

Summary

A new radiometric method is described.

It is claimed to be a method of precision, as the human factor in first estimating the distance of the object from the film is eliminated.

The application of the method to cephalometry and pelvimetry is described in detail.

Other applications in surgery of the brain, chest, abdomen, and pelvis are indicated.

REFERENCES

Hastings, W. H. (1942). *Brit. J. Radiol.*, **15**, 114.
McDonogh, C. L. (1935). Ibid., **8**, 613.
Moir, J. Chassar (1941). *Edinb. med. J.*, **48**, 361.
Portes, L., and Blanche (1924a). *Gynéc. et Obstét.*, **10**, 333.
—— —— (1924b). Ibid., **10**, 416.
Reece, L. N. (1935). *Proc. roy. Soc. Med.*, **28**, 489.
Roberts, R. E. (1935). *Brit. J. Radiol.*, **8**, 601.
Rowden, L. A. (1935). Ibid., **8**, 610.
Thoms, H. (1927). *Surg. Gynec. Obstet.*, **45**, 827.
Walton, H. J. (1931). *Amer. J. Roentgen.*, **25**, 758.

INTRAMUSCULAR INJECTION OF MEPACRINE (ATEBRIN): HISTOLOGICAL EFFECT

BY

FRANK HAWKING, D.M.

(From the National Institute for Medical Research, London)

This note describes a histological examination of the effect of injecting mepacrine methanesulphonate (atebrin musonate) intramuscularly. Owing to the shortage of quinine, mepacrine will be used more extensively than in the past. When oral administration is impracticable it will be necessary to inject the drug intramuscularly or intravenously; in order to assist the choice between these two routes information is presented about the local effects caused by intramuscular injection.

Literature

Many clinical observations on the subject have been reported, but histological observations have not been described. Field, Niven, and Guest (1937) injected two doses each of 0.375 g. musonate into 284 patients. Local reactions were usually unimportant, but occasionally there was a little tenderness and induration at the site; in one case an abscess with atebrin-stained contents developed. During the Ceylon malaria epidemic (1934-5) 681 patients were treated with similar doses; 21.3% developed pain at the site of injection, and in two cases abscesses occurred. (When quinine was injected 36% of 424 patients suffered from pain, but there were no abscesses.) In a later series of 530 cases treated in the field most patients complained of pain for 2 to 4 days, some suffered from painful swelling and induration at the site, and in two instances abscesses resulted. Pain after the injection of atebrin was less frequent than after the injection of quinine; it might be severe. Abscesses were indolent and slow to heal; they were similar to those caused by quinine, and tracked along the fascial planes in the same way. Hay, Spaar, and Ludovici (1935) treated 3,500 cases; pain was negligible and no abscesses were observed. Simeons (1936) injected two doses each of 0.3 g. into 2,800 people. With good aseptic technique no abscesses occurred; but with a second series of 2,800 cases, in which asepsis was less satisfactory, there were 49 abscesses. Clinical series in which the local reactions were considered as unimportant are also reported by Carman and Cormack (1936), Eckhardt (1933), Kröber (1936), Seelig and Singh (1936), Sicault (1934), Siegenbeek van Henkelom and Overbeek (1938), van Slype (1935), Vardy (1935). Dove (1942) recommends the intramuscular injection of atebrin as being less harmful than quinine. The injection is not painful, and if done with sterile precautions will not cause abscesses; Dove prefers it to intravenous injection of atebrin.

Experimentally Hecht (1933) injected 0.1 c.cm. of a 1% solution of the hydrochloride—i.e., 1 mg.—apparently subcutaneously; it caused hyperaemic swelling, which disappeared in 24 to 48 hours without necrosis. Hicks (1935) injected 10 to 20 mg. atebrin musonate intramuscularly into 8 monkeys, which were killed two days later. In one case he found macroscopically an area of congestion 1 × 0.5 cm., haemorrhage, and oedema, but the rest showed no gross changes; no histological observations were made.

Summing up the literature, it is generally considered that the intramuscular injection of atebrin is as a rule innocuous, but pain and swelling occur in some patients, and, rarely, abscesses may result.

Experimental Results

The present experiments were made by injecting mepacrine methanesulphonate (quinacrine), 50 mg. in 0.5 c.cm. of distilled water, into rabbits weighing 1.5 to 2 kg. Most of the injections were made into the muscles of the thigh or of the loin, but some were made under the skin of the abdominal wall. If larger quantities—e.g., 70 mg. per kg.—were injected the rabbits were often prostrated in about 5 minutes, and some died; apparently absorption is very rapid. Injections were also made into rats. The rabbits were killed after 1 to 5 days and the rats after 1 to 14 days; the site was excised, fixed in formol-saline, and examined by the usual histological methods.

Naked-eye Appearances.—After intramuscular injection the macroscopic evidence of injury was usually slight. The muscles might be somewhat swollen and small haemorrhages might be present along the needle track. In the thigh, the intermuscular space along the sciatic nerve was often stained yellow from hip to knee. But in most cases there was little to be seen, and the site of injection was often difficult to identify. After subcutaneous injection the skin was usually greatly swollen, sometimes becoming as much as 1 cm. in thickness, the swollen area being 4 cm. in diameter. The swelling occurred in the connective tissue of the skin, which was stained yellow and distended with fluid. After 5 days the affected part was converted into a hard dry necrotic mass. The underlying muscles were little affected.

Microscopical Appearances.—Sections taken 1 to 2 days after intramuscular injection showed areas of necrosis in the muscles. The affected fibres were swollen, structureless, and eosinophilic, and the nuclei were destroyed. A moderate amount of fluid (often albuminous) was present between the fibres, but cell-infiltration was minimal. The areas of necrosis seen on the slide (transverse section) measured 0.5 to 1 cm. across, but they probably extended over a greater distance in the longitudinal direction. In cases in which the site involved an intermuscular space the connective tissue was greatly distended with fluid and a moderate number of cells, most of the cellular elements being necrotic. Nerve trunks showed haemorrhage and degenerative changes, and the outer coats of the larger blood vessels were necrotic. The necrosis also involved the superficial layers of the adjacent muscles. At the edges of the necrotic region there were moderate collections of cells. In the adjacent areas the muscle fibres were often swollen, and stained irregularly. After 4 to 5 days the cellular reaction around the area of necrosis was more pronounced, granulation tissue began to appear, and a zone of demarcation became established.

After subcutaneous injection the appearances were similar. The deeper connective tissue of the skin was greatly swollen with fluid, and towards the edges it was patchily infiltrated with cells, many of which were degenerate; the whole tissue had undergone necrosis over a considerable area. The sub-

cutaneous layer of muscle was necrotic; the epithelium was limited in extent, it being apparently more resistant than the deeper tissues.

In rats the histological reaction was similar. When 0.75 mg. dissolved in 0.15 c.cm. was injected intramuscularly the lesion was small, but when it was injected subcutaneously considerable oedema and necrosis occurred. When 20 mg. in 0.3 c.cm. was injected very extensive oedema and necrosis occurred, whichever route was employed.

The damage caused by mepacrine was compared with that caused by quinine. The monohydrochloride was employed. This is less acid than the more soluble bihydrochloride generally used clinically, and consequently the lesions should be less extensive, being due only to the quinine radical and not to the acid part.

When 20 mg. dissolved in 0.6 c.cm. of water was injected intramuscularly into rabbits the lesions were closely similar in appearance and extent to those caused by 50 mg. of mepacrine. In rats the lesions produced by 10 mg. of quinine were less extensive than those produced by 20 mg. of mepacrine, but those caused by 4.5 mg. of quinine were greater than those caused by 0.75 mg. of mepacrine.

Discussion

Since the macroscopic evidence of injury is usually slight compared with the microscopical evidence, the present findings are easily reconcilable with those reported in the literature. They show that the intramuscular injection of mepacrine always causes a limited area of necrosis around the site of injection, presumably due in large part to the direct action of the mepacrine base. With 0.375 g. (as for man) instead of 0.05 g., the extent of the damage would be somewhat larger, but still not great enough to constitute an absolute contra-indication to the practice in selected cases. As compared with quinine, the damage caused by 50 mg. of mepacrine was similar in extent to that caused by only 20 mg. of quinine. Since the standard dose of mepacrine methanesulphonate (by intramuscular injection) is 0.375 g., while an average dose of quinine is 0.5 g. (7½ gr.) of the bihydrochloride (which is more acid than the monohydrochloride and possibly more injurious locally), it would seem that a therapeutic injection of mepacrine should cause less than a third of the damage done by a therapeutic injection of quinine.

The relative and absolute merits and demerits of the administration of mepacrine by intramuscular injection cannot properly be discussed here. According to Hecht (1936) most of the mepacrine is absorbed from the site in one to three hours; and this statement about the rapid absorption is in agreement with my own experience and with the reports reviewed above. Clearly, mepacrine should not be injected by any route unless it is impracticable to give it by mouth. The intravenous route avoids local damage, but entails a certain risk to life unless the injection is given *very slowly*; the intramuscular route is certain to cause a small amount of local injury, but the risk to life from over-rapid absorption is much less (although this is not absolutely excluded, since 4 patients died from mepacrine intoxication out of the 681 treated by intramuscular injection during the Ceylon epidemic). The choice between the two routes of injection must depend upon clinical experience and upon the discretion of the medical man responsible for the case.

Summary

A review of the literature shows that intramuscular injection of mepacrine (atebrin) is considered to be free from local reaction in most cases, to cause pain and swelling in some cases, and to cause local abscesses in rare cases.

Mepacrine methanesulphonate (atebrin musonate) was injected intramuscularly and subcutaneously into rabbits and rats. The macroscopic lesions were often inconspicuous, but microscopical examination always showed a certain amount of necrosis at the site of injection. The damage caused by a therapeutic injection of mepacrine is similar in kind to that caused by a therapeutic injection of quinine, but probably less than one-third as extensive. For patients who cannot take mepacrine by mouth this local damage does not contraindicate parenteral injection, but its occurrence should be borne in mind when choosing between the intramuscular and the intravenous routes.

Grateful acknowledgments are due to Sir S. Rickard Christophers for his encouragement and advice, to Messrs. May and Baker Ltd. for the supply of the compound, to Mr. F. J. Higginson for the histological preparations, and to Miss R. J. Berson for technical assistance.

REFERENCES

Carman, J. A., and Cormack, R. P. (1936). *Trans. roy. Soc. trop. Med. Hyg.*, **29**, 381.
Ceylon Malaria Epidemic (1934–5). Sessional Paper XXII, p. 73, Ceylon.
Dove, W. S. (1942). *Amer. J. trop. Med.*, **22**, 227.
Eckhardt, A. E. (1933). *Arch. Schiffs- u. Tropen-Hyg.*, **37**, 475.
Field, J. W., Niven, J. C., and Guest, C. (1937). *Bull. Inst. med. Res.*, F.M.S., No. 2, 1.
Hay, D. C., Spaar, A. E., and Ludovici, H. L. (1935). *Indian med. Gaz.*, **70**, 678.
Hecht, G. (1933). *Arch. exp. Path. Pharmakol.*, **170**, 328.
—— (1936). Ibid., **183**, 87.
Hicks, E. P. (1935). *Rec. Malaria Survey India*, **5**, 203.
Kröber, F. (1936). *Arch. Schiffs- u. Tropen-Hyg.*, **40**, 119.
Seelig, S. F., and Singh, W. (1936). *Rec. Malaria Survey India*, **6**, 171.
Sicault, G. (1934). *Bull. Soc. Path. exot.*, **27**, 544.
Siegenbeek van Henkelom, A., and Overbeek, J. C. (1938). *Geneesk-Tijdschr. Nederl.-Ind.*, **78**, 1658.
Simeons, A. T. W. (1936). *Indian med. Gaz.*, **71**, 132.
Van Slype, W. (1935). *Brux. méd.*, **15**, 1003.
Vardy, E. C. (1935). *Malay med. J.*, **10**, 67.

POST-VACCINIAL ENCEPHALOMYELITIS

BY

SAMUEL DUNN, M.D.

The nervous complications of vaccination have been recognized for many years. Turnbull (Turnbull and McIntosh, 1926) reported a fatal case occurring in 1912, but chief interest in the condition arose after 1923. The Report of the Committee on Vaccination was issued in 1928. The cause of the nervous complications of vaccination is still unknown. The condition very rarely follows vaccination in infancy; adults who are undergoing their primary vaccination are most susceptible. The patient whose case is described below had been successfully vaccinated in infancy: a well-marked scar could be seen close to the present pustule. According to her, considerable bleeding occurred at the time of the vaccination, and it seems likely that a "cross-hatching" method was employed. Some authorities consider that linear scratches are not so likely to be followed by nervous complications as "cross-hatching" methods.

In this patient the cerebral symptoms preceded the spinal symptoms by two days, and consisted of lethargy, mental confusion, and insomnia. The interval between vaccination and the onset of symptoms was 15 days; the average period is said to be about 12 days. The paraplegia developed very rapidly, and was complete in 12 hours. Bronchopneumonia and cystitis are the usual causes of death. In the present case cystitis gave rise to the main anxiety. Sulphanilamide certainly kept the urinary infection within bounds, but had no apparent effect on the nervous symptoms. On the whole the administration of plasma appeared to be beneficial, but it is difficult to estimate its value in a condition such as this, in which there is a strong tendency to spontaneous recovery. The plasma seemed to have a very favourable influence on the mental symptoms; these passed off after the first dose. The mortality of post-vaccinial encephalomyelitis is between 50 and 60%, but the prognosis is probably better in the spinal forms than in the severe cerebral types.

As a result of experience in treating the present case it is advised that suitable serum or plasma should be given as soon as possible. This is obtained from a person vaccinated about 21 days earlier. When mass vaccination is going on at the time there will probably be little difficulty in obtaining a suitable donor. In other circumstances it would be necessary to vaccinate a donor; the interval of waiting before the plasma can be obtained would then be a great drawback. One might seek some service or institution—e.g., a hospital—where the entrants must be vaccinated before admission, and it might be possible to find there a recently vaccinated individual who would consent to act as donor. The plasma used in the present case contained 3.8% sodium citrate solution. Originally 50 c.cm. of citrate was added to the blood as preservative; 220 c.cm. of plasma was obtained, and presumably nearly all the citrate was in the plasma.

It is interesting to note that the patient had an attack of tetany during the administration of the plasma. There had

been some vomiting before the attack. Her chief complaint was of agonizing pains in the arms, for which large doses of morphine were given.

REPORT OF CASE

The patient was a woman aged 21, a school teacher. Vaccination had been successfully performed in infancy. She was in good health when vaccinated on July 9, 1942, and a few days later travelled to Glasgow. She was first seen on July 20, when she complained of a very painful arm which kept her awake at night. There was a well-marked reaction around the pustule, with a little oedema of the arm, but no signs of sepsis were present, and the glands in the axilla and the neck were not enlarged.

On July 24 she complained of feeling easily tired; she became drowsy and took little food; on the following day she could be aroused only with difficulty, and considerable mental confusion was present. On the 26th she was very drowsy; the temperature and pulse rate were normal. The vaccination area was covered by a thick scab. She had passed no urine for 24 hours. Examination showed a flaccid paraplegia. There was complete loss of sensation over the lower limbs and over the abdominal wall below the level of the umbilicus. The abdominal muscles were flaccid and there was considerable abdominal distension, even after emptying the bladder by catheter. The knee-jerks were present at this stage but disappeared a few days later. The plantar reflexes could not be elicited. The fundi and external ocular muscles showed no abnormality. The pupils were dilated and reacted sluggishly to light. Mental confusion was pronounced. On the 27th she complained of pain in the neck. The posterior neck muscles were tender to the touch, but there was no nuchal rigidity and Kernig's sign was absent. She required regular catheterization. Constipation was marked, and repeated enemata gave no result. The temperature rose to 100° F.

On July 28 the patient could move the toes of the left foot. She began to have severe pains in the arms and had to have morphine regularly. These pains persisted for about three weeks. The urine was now heavily infected and the temperature was continuously raised. She was restless and delirious and had frequent attacks of vomiting. Sulphanilamide was given, a total of 18 g. being administered in a week. On Aug. 5, when her condition was giving rise to the most acute anxiety, she passed some urine into the bed. This incontinence persisted for another 10 days, but the urinary infection soon passed off. At this date she had no sensation in the lower limbs and the mental confusion was still present. On Aug. 6 she had slight rotatory movements at each hip-joint. During the day she was somnolent and at night restless and excited. On Aug. 20 plasma was obtained from a recently vaccinated individual, and 20 c.cm. was administered intramuscularly each day. The patient's mental condition improved after the first injection, and in two days was normal. The abdominal muscles regained their tone, and after a period of persistent vomiting the distension passed off. On Aug. 25, after 100 c.cm. of plasma had been given, she had an attack of tetany. Plasma administration was stopped for two days and then restarted, using smaller doses. A further 120 c.cm. was given. Several attacks of tetany of less duration occurred.

From this date the patient rapidly recovered the movements of the limbs—first dorsiflexion of the ankles, then flexion of the hip-joints, and then flexion of the knee-joints. On Sept. 4 the left plantar reflex was extensor. Sensation was not yet fully restored. Deep sensibility seemed to be normal, but she had difficulty in locating touch and pain and in distinguishing between the finer grades of temperature. There was slight atrophy of the muscles of the thighs. On Sept. 9 the left knee-jerk was elicited for the first time since it was lost at the beginning of the illness. She still had imperfect bladder control. By the 13th she could raise each leg from the bed, and by the 23rd could shuffle a few steps.

Thereafter she progressed rapidly. On Dec. 24 the only muscular weakness which could be made out was in the extension of the right big toe and in dorsiflexion of the right ankle. She had difficulty in distinguishing between the finer grades of temperature, and her tactile localization was still deficient over the lower limbs. Her bladder control was normal, but she still had a little frequency. She began work early in Jan., 1943.

I wish to thank Dr. George Allan and Prof. T. K. Monro of Glasgow for their advice when they saw the case in consultation with me; to the latter I am also grateful for making arrangements to obtain the special plasma from the Glasgow and West of Scotland Blood Transfusion Service.

REFERENCES

Report of Committee on Vaccination (1928), London.
Turnbull, H. M., and McIntosh, J. (1926). *Brit. J. exp. Path.*, **7**, 181.

According to A. J. Muelier and others (*Johns Hopk. Hosp. Bull.*, **72**, 110) the minimum requirements of enzymic casein hydrolysate for maintenance is between 0.4 and 0.7 g. per kilo. This indicates its approximate equivalence with intact protein for maintenance, since maintenance of the latter is usually regarded as between 0.4 and 0.7 g. per kilo.

Medical Memoranda

Kienböck's Disease: Aetiology

Kienböck's disease of the semilunar bone is by no means rare, and is described in most textbooks. It is regarded by most authors as being of the same class as Köhler's disease of the tarsal scaphoid, Calvé's disease of the spine, and Perthes' disease of the head of the femur. But whereas these, being essentially epiphysial in origin, are found in children, Kienböck's disease is found only in adults. The typical case shows a syndrome consisting of pain over the semilunar bone, limited movement of the wrist, possible ultimate retraction of the head of the third metacarpal, and degeneration of the semilunar seen by radiographs. Most authors agree that the condition is fundamentally an avascular necrosis (Maingot, 1939; Handfield-Jones and Porritt, 1940), but there is a divergence of opinion concerning the aetiology. It is for this reason that the following cases are published.

CASE HISTORIES

Case 1.—A leading aircraftman aged 33 reported sick on April 6, 1942, complaining of pain in the right wrist. Three years previously he had had a septic left thumb, which healed on treatment. Shortly afterwards, for no apparent reason, the right wrist became painful. He was treated for neuritis of the wrist for three years without improvement. No radiograph was taken. He denied having ever sprained or sustained any injury to the wrist. On examination the right wrist showed no obvious deformity. Palmar flexion was limited; extension was normal. Passive adduction caused pain on the radial side of the joint. Tenderness was elicited over the semilunar bone on the dorsal surface, and over the scaphoid in the "anatomical snuffbox." There was no shortening of the metacarpal heads. Radiographs showed gross disorganization of the semilunar bone, with irregular absorption of bony trabeculation. The degree of opacity indicated avascular necrosis of the bone. Arthritic changes were seen around the cuneiform and the articular surfaces of the radius. Diagnosis: Kienböck's disease.

Case 2.—A gunner aged 30 was seen on May 9, 1942. He complained of pain in the left wrist of one year's duration, and had been treated for a sprained wrist for that period of time without improvement. No radiograph was taken. Injury or trauma was emphatically denied. No septic focus could be remembered, but dental treatment had been necessary some time previously. On examination the wrist showed no obvious deformity or swelling. Palmar flexion was limited; extension was normal. Passive adduction caused pain on the radial side of the joint, and tenderness was elicited by pressure on the radial and ulnar sides: the pain was transmitted to the semilunar area. Pressure over the semilunar bone itself caused sharp pain. There was no retraction of the head of the third metacarpal. Radiographs showed gross disorganization of the semilunar bone, with arthritic changes around the articular surfaces of the radius and the scaphoid. The degree of opacity indicated avascular necrosis. Diagnosis: Kienböck's disease.

COMMENTS

It is stated (McGregor, 1939) that the nutrient artery to the semilunar bone is carried by the posterior ligament, which consists of the deep fibres of the dorsal radio-carpal ligament. The commonest fracture of the bone is a separation of a small fragment from the posterior part (Hosford, 1939). If this fracture involves the nutrient foramina and interferes with the blood supply, then avascular necrosis will follow. Watson-Jones (1941) states that there is also an anterior nutrient artery which enters via the anterior ligament, and it is only when both supplies are disorganized, as in complete dislocation of the bone with rupture of these ligaments, that avascular necrosis occurs. Rupture of the posterior ligament alone is not usually sufficient to interfere with adequate nutrition.

Many authors assert that trauma involving the blood supply is the aetiological factor in producing Kienböck's disease; others say the cause is unknown. In Case 1 there is no history of trauma, but of a septic focus. It seems, therefore, that in this instance the condition is the result of the entry of organisms of mild virulence, and a sequel of an osteitis.

Case 2 also gives no history of trauma, but the possibility of a septic focus (teeth) cannot be dismissed. It appears that when trauma can be definitely excluded haematogenous infection must be considered as an aetiological factor in producing the condition known as Kienböck's disease.

SUMMARY AND CONCLUSIONS

Two cases of Kienböck's disease are described.

The possibility of bacterial infection as an aetiological factor is suggested in cases not directly attributable to injury.

The need for *x*-ray examination in all cases of injury and disability of the wrist-joint is indicated, with follow-up radiography later in all cases that do not respond to treatment.

My thanks are due to Surg. Cmdr C. B. Nicholson, R.N., and to Squad. Ldr. L. Stone, R.A.F.V.R., for their help and permission to publish these notes.

M. E. GORDON, M.B., M.R.C.S.,
Flying Officer, R.A.F.V.R.

BIBLIOGRAPHY

Handfield-Jones, R. M., and Porritt, A. E. (1940) *Modern Surgery*, Edinburgh.
Hosford, J. (1939). *Fractures*, London.
McGregor, A. Lee (1939). *Surgical Anatomy*, Bristol.
Maingot, R. (1939). *Postgraduate Surgery*, London.
Romanis, W. H. C., and Mitchiner, P. H. (1937). *Science and Practice of Surgery*, London.
Watson-Jones, R. (1941). *Fractures and other Bone and Joint Injuries*, Edinburgh.

Urea for Migraine

A man aged 42, employed as a clerk, had suffered for several years from severe headaches with acute exacerbations of migraine type. Many drugs had been tried without success, and he was admitted to hospital under Dr. A. P. Thomson for investigation with a view to operation for cerebral decompression. There were no abnormal signs on physical examination. *X*-ray films of the skull, cerebrospinal fluid before and during an attack, urea-concentration test—all were normal. The blood urea during an attack was 88 mg. per 100 c.cm. After taking 15 g. of urea for a urea-concentration test the patient was next morning free from headache for the first time for several weeks. On the chance that this might be *propter* and not just *post*, it was decided to continue the urea in 20-gr. doses daily. Headaches did not return; no attack of migraine developed. The patient was discharged from hospital with a recommendation to go on taking urea. This course was adopted, and there has been no recurrence of migraine or severe headache for the past 9 years, except during periods when the patient has given up the regular use of urea. One hesitates to add to the long list of remedies for migraine, but during the last 8½ years I have used urea with such success both for typical migraine and for persistent headache not typically migrainous that I wish to bring the treatment to the notice of others, fully aware that my evidence is incomplete.

The headache usually disappears after a short course of treatment, and in cases of typical migraine the attacks do not recur or are so modified as to make them bearable so long as the patient continues treatment, which is as follows: 20 gr. of urea in water three times a day for a week; a similar dose twice a day for a week; subsequently 20 gr. in a single daily dose for an indefinite period. There are no untoward effects.

Here are thumbnail notes of 3 cases: (1) A male aged 55 had frequent attacks of migraine with hemianopia. Treatment with urea brings great relief, but he relapses to typical attacks if he neglects taking his daily dose. (2) A male aged 57, from the age of 7 suffered periodically from attacks of headache which lasted as a rule for several days, occasionally developing into typical migraine. Since taking urea he has had no severe attack of headache for 8 years. (3) A female aged 35 had monthly attacks. She has had no attacks during the last 18 months (while taking urea), and now leads a normal life.

Goldzieher[1] in a paper on the "Endocrine Aspects of Headache" reports 50 consecutive cases of severe headaches, most of which were of the characteristic migraine type. Oliguria was a distinct feature in most, the twenty-four-hour specimens showing an average sodium chloride content of only 6.7 g. A salt-tolerance test indicated a retention of 73% of the test salt for the whole group, accompanied by water retention. Goldzieher postulates a breakdown in the metabolism of salt and water, and explains migraine headaches as the result of increased intracranial pressure. He says: "They develop when increased permeability of the capillaries permits increased flow of water to, and subsequent retention in, tissues which have stored abnormal quantities of sodium salts."

The diuretic effect of urea is well known, and it may be that it is this which corrects the temporarily disturbed balance that results in an attack of migraine.

Birmingham. J. A. BROWN, M.D.

REFERENCE

1 *J. Lab. clin. Med.*, 1941, **27**, 150.

H. Gold (*Arch. intern. Med.*, 1942, **70**, 785) records his observations on 60 cases of anthrax which he has seen since March, 1933; 41 were males and 19 females. The ages ranged from 3½ to 62 years, but most were between 18 and 27. Anti-anthrax serum was given intravenously to 21 patients, with only 1 death; neoarsphenamine given in addition to the serum was of little or no benefit. In 42 cases treatment consisted in administration of sulphonamide compounds, with excellent results in 30 cases. Sulphapyridine was the most effective compound; next came sulphathiazole and then sulphadiazine.

Reviews

SEARCHLIGHT ON THE CAPE

Official Report of the Social Survey Conference, Cape Town, 1942. (3s. 6d.) Capetown: Paul Koston. 1943.

A social survey conference was held in Capetown last year, following upon a survey which had revealed some disquieting things about the health and economic standards of the coloured population. The papers and discussions—some of them in Afrikaans, but summaries in English are given—cover a wide range. Some remarkable facts are set out by Prof. T. S. Higgins, medical officer of health for Capetown. It is shown that, while the infant death rate for Europeans in the municipality is below that for England and Wales, the rate for non-Europeans is three times as high. Another significant fact is the prevalence of tuberculosis. In the last year for which there were figures the death rate from tuberculosis among non-Europeans was 425 per 100,000 of the population—this in a city where the average annual sunshine record is 7½ hours a day, compared with something like 3½ hours in London. Dr. J. H. Harvey Pirie, president of the Federal Council, Medical Association of South Africa (B.M.A.), urges the establishment of a joint Ministry of Health and Social Welfare to take over the present incoordinated services, but to avoid the capture of such an organization by the political machine he would have the technical control of the services delegated to a health commission, and not run directly by a State Department. There was a curious repetition at this conference of the ideas and controversies at present stirring medical politics in this country. The conference carried resolutions about hospital beds and health education and a comprehensive medical service, and then it went on to urge the Government to investigate methods of removing tariffs and prohibitions on the importation of health-giving foodstuffs and all systems of internal control which involve raising of food prices. The document is not easy to read, but the student of sociology will find it interesting.

DEGENERATIVE JOINT DISEASE

Changes in the Knee Joint at Various Ages: With Particular Reference to the Nature and Development of Degenerative Joint Disease. By G. A. Bennett, M.D., H. Waine, M.D., and Walter Bauer, M.D. (Pp. 97; illustrated. $2.50 or 14s.) New York: The Commonwealth Fund; London: Oxford University Press. 1942.

The authors of this work have devoted many years to the study of chronic rheumatic disorders, and here record the results of an investigation into the changes in the knee-joints in a large number of individuals who had no history of articular disease. They have thus established what they term a "norm" for the knee-joint at each age decade, and have shown that degenerative changes begin to make their appearance very soon after normal development has been completed. After the second decade superficial fraying of the weight-bearing surfaces begins to appear and progresses to roughening and splitting of the articular cartilage; extensive damage was found before any changes in the *x*-ray appearances could be detected. Lipping of the bones was not met with till the fifth decade, except in one case. The observations supported the findings of other investigators that the initial anatomically demonstrable lesion is a degenerative process in the superficial layer of articular cartilage, the criteria for an infectious lesion were never present, while evidence of inflammation appeared only in the most advanced cases. A remarkable feature is that Bennett, Waine, and Bauer found no convincing evidence that degenerative joint disease is more common in individuals who have done strenuous labour than in those who have led sedentary lives, and they also agree with Llewellyn and many others that any direct evidence of causal relationship with arteriosclerosis is entirely lacking; one case which in the seventh decade showed the least deviation from the normal of all those examined at this age had arteriosclerosis and gangrene of the foot. They arrive at the conclusion that degenerative joint disease appears to be related to the senescence of joint tissues, varying to a certain degree with the hereditary endowment of the individual, but that what brings about the ageing of articular structures is an unsolved problem.

This is a most valuable piece of research, studying changes as they develop from the normal to the pathological, and furnishes a starting-point for further work which should be of great value in the elucidation of the problems of chronic rheumatic disease.

REGIONAL ANATOMY

A Synopsis of Regional Anatomy. By T. B. Johnston, M.D. Fifth edition. (Pp. 424; illustrated. 16s.) London: J. and A. Churchill. 1943.

A fifth edition of Prof. T. B. Johnston's synopsis has now been reached, and it fully sustains the character of his previous work. The book is designed to meet the needs of students who have already gained a preliminary knowledge of anatomy in the course of their practical work in the dissecting-room, but who after clinical experience, acquired during the later stages of their training, wish to revise their earlier anatomical work in the light of its application to medical and surgical practice. It is evident from the author's foreword that he does not seek to substitute a *synopsis* of regional anatomy for the more complete descriptions of the larger textbooks on systematic anatomy, but rather to supplement revision of these by a short survey of the more important facts of regional anatomy studied from the applied point of view. As one might expect from Prof. Johnston special attention has been devoted to the description of the central and peripheral nervous systems, and the bearing that an accurate knowledge of the peripheral distribution of the various types of sensory and motor nerves, and of the correlated tracts in the central nervous system, has upon diagnosis and treatment. This section has been brought up to date and includes topographical data concerning recent work on the thalamic and hypothalamic nuclei and tracts. These sections, and these sections only, are illustrated, the figures being diagrammatic and simple. The diagrams are for the most part adequate and serve their purpose. Fig. 17, however, shows an unnecessary and considerable dislocation with regard to the position of the hypothalamic nuclei and corpora albicantia, and the mode of spelling the adjective "somesthetic" is likely to offend the sensibility of classical scholars. The general excellence of the book, however, should not be judged from the above examples, and it may confidently be recommended to senior students as a valuable summary of the more essential points of regional anatomy.

Notes on Books

In the third edition of Dr. W. V. THORPE'S *Biochemistry for Medical Students* (J. and A. Churchill; 16s.) the author has correctly appreciated the true nature of his charge, which is a discussion of the chemical reactions induced by biological agency within the living organism, for the study of this relates to the functions of life and reaches beyond the chemistry of the matters composing the organism itself. It is a book which fully meets the requirements of medical students, omitting nothing of fundamental importance even among the quickly advancing discoveries in this branch of science; it is well suited for the student's purpose, and its value is further enhanced by the author's gift for producing easy reading. It is not only a book for students; it is no less valuable as a book of reference.

Dr. CHARLES WORTHAM BROOK, having read a biography of Richard Carlile (1790-1843), came across a reference to Sir William Lawrence, and this started him upon a hunt for traces of progressive leaders of the medical profession who may have been known to Carlile—a man described by G. J. Holyoake as "having done more than any other Englishman in his day for the freedom of the Press." Carlile was kept in Dorchester Gaol for six years for publishing political works frowned on by authority, and suffered in all nearly ten years' imprisonment for his vindication of a free Press. Under the title *Carlile and the Surgeons* Dr. Brook has compiled a pamphlet (Strickland Press, 104, George Street, Glasgow; 2s. 3d.). This includes an open letter to the Mayor of Dorchester, who was also surgeon to the gaol, in which Carlile vigorously supported the medical reform movement; some historical matter about William Lawrence's "desertion and betrayal of Wakley and the medical reformers in 1828," and about Joseph Hume, described as "the surgeon who became a party leader"; also an extract from the *Lancet* of Feb. 18, 1843, in which Thomas Wakley commended the bequest by Carlile of his body for dissection at St. Thomas's Hospital.

Volume LXII of the *Transactions of the Ophthalmological Society of the United Kingdom*, for the year 1942, is published by J. and A. Churchill at £2. The chief discussions reported are those on the value of sulphonamides in ophthalmology, opened by Major G. Scott and Mr. Arnold Sorsby, and on the role of vitamins in ophthalmology, opened by Dr. Raymond Greene and Mr. F. Williamson-Noble. These are followed by papers on trachomatous tumour of the conjunctiva simulating tubercle, on "white rings" in the cornea, on malignant melanoma of the iris, on retinal disease, on glaucoma, and on diseases of the optic nerve. The miscellaneous papers include one on anaesthetics for ophthalmic operations and another on the extraction of magnetic foreign bodies from the vitreous chamber. The Oxford Ophthalmological Congress of 19[illegible] is fully reported, and the volume closes with transactions of the North of England and the Irish Ophthalmological Societies.

The ninth volume (for 1943) in the series entitled *Modern Treatment Year Book* is edited by Surgeon Rear-Admiral C. P. G. WAKELEY and published at 12s. 6d. by the *Medical Press and Circular*. It comprises 26 short articles on a variety of subjects in medicine, surgery, and gynaecology, followed by a group of papers on some injuries and diseases associated with war or on dietetics in wartime. Each contributor writes from personal experience, and the list of authors includes the names of well-known teachers in London and the Provinces. The keynote of the series is brevity, treatment is the main theme.

Officers of the recently formed Indian Army Medical Corps will find much useful information in *A Handbook for Emergency Commissioned Officers of the Indian Medical Service*, by Lieut.-Col. J. R. DOGRA (Bombay: Thacker & Co., Ltd.). The book covers, among other subjects, the duties of a regimental medical officer, the organization of the Army in India, the collection and evacuation of casualties, and medical arrangements on active service. A short bibliography of relevant official publications is appended to each chapter. There are also nine appendices, one of which comprises a list of sixty-six Army forms, "with which the young medical officer must be completely familiar, and which he should be capable of filling up without the assistance of a clerk or subordinate." An index would have enhanced the value of the book.

Preparations and Appliances

A MOUTH GAG FOR EDENTULOUS PATIENTS

Major H. L. THORNTON, specialist anaesthetist, R.A.M.C. writes:

The device illustrated here was designed to help in the administration of gaseous anaesthetics to edentulous patients. With such patients the difficulty in adapting the facepiece accurately enough to exclude all leakage presents a considerable problem, particularly important when a closed-circuit technique has to be employed. I have found, after fairly extensive trial, that this gag overcomes the difficulty in a very satisfactory manner.

The gag is made of partially vulcanized rubber and consists essentially of two curved plates moulded to form a superior and inferior sulcus to accommodate the upper and lower alveolar margins. The plates are separated by lateral pillars, made slightly convex at their outer margins, to provide support for the insides of the cheeks and preserve the normal contours of the face. Centrally there is a wide aperture through which an artificial airway may be admitted, if desired.

The gag may be introduced under very light anaesthesia, or, in the case of patients accustomed to the wearing of dentures, it appears to cause little discomfort if inserted before induction of anaesthesia. I am still using my original model, and after some 5 years of trial have never found an edentulous mouth to which it could not be adapted, whatever the difference in shape and size. The malleability of the rubber and width of the alveolar sulci allow of considerable variation of fitting. The rubber is readily sterilizable by boiling.

The gag is manufactured by Medical and Industrial Equipments Ltd., 12, New Cavendish Street, W.1. I would like to express my indebtedness to Mr. Douglas Hallon, M.R.C.S., L.D.S., for the help he gave me in constructing the experimental models.

ANTIRETICULAR CYTOTOXIC SERUM*

BY

ALEXANDER BOGOMOLETZ

Member of the Academy of Sciences of the U.S.S.R.

The physiological system of connective tissue performs within the organism very important plastic, trophic, and defensive functions. The struggle of the organism against infectious diseases, and its resistance against the development of tumours, the healing of wounds and ulcers, and the union of fractures, largely depend on the reactivity of the physiological function of the connective tissue.

I have introduced antireticular cytotoxic serum with a view to controlling this reactivity and to stimulating the physiological system of the connective tissue. This serum is obtained by repeated injections of cellular elements of human spleen and bone marrow into horses. Subcutaneous injection of a fairly strong dose of antireticular cytotoxic serum (0.05 to 0.1 c.cm.) exerts a very strong specific stimulating action upon the physiological system of the connective tissue.

In the summer of 1942 a conference was held in Ufa on the therapeutic application of the serum. The conference was attended by professors of the Moscow, Kiev, Kharkov, and Bashkirian Medical Institutes as well as by physicians of numerous evacuated hospitals of various districts and cities. More than thirty reports were made.

It has previously been shown by Dr. Oleg Bogomoletz that antireticular cytotoxic serum accelerated the union of fractures. Profs. Ischenki and Lurie have pointed out the efficacy of the serum in treating septic diseases. The Academician Strajeski found in his clinic that acute rheumatism can also be cured by means of this serum, and Prof. Mankovsky has mentioned the favourable effect of antireticular cytotoxic serum on the course of infectious diseases of the nervous system.

Findings of Russian Conference

It was stated by the conference, on the basis of more than 2,500 clinical cases, that:

"The antireticular cytotoxic serum proposed by the Academician Alexander Bogomoletz is a powerful specific factor affecting the physiological system of the connective tissue, and exerting, when applied in proper small doses, a strong stimulating action upon the cellular elements of that system, as evidenced by a number of experimental studies and clinical observations. The therapeutic application of the above serum is indicated principally in all those cases of diseases which involve a decrease or depression of the functions of the physiological system of the connective tissue.

About 2,500 clinical observations discussed at the conference conclusively show that antireticular cytotoxic serum is therapeutically effective in war traumata and in the following diseases:

1. (*a*) Particularly slow-uniting bone fractures; (*b*) slow-healing, feebly granulating, and infected wounds; (*c*) general suppurative infection, especially in its initial stages; (*d*) suppurative inflammation of the cavities and tissues; (*e*) frost-bite and burns of the second and third degrees; (*f*) infected traumata of the eyes.

2. A number of infectious diseases: (*a*) cerebrospinal meningitis; (*b*) puerperal and gynaecological sepsis; (*c*) rheumatism; (*d*) unresolved pneumonia and lung abscess; (*e*) tonsillitis.

3. (*a*) Traumatic and infectious diseases of the central and peripheral nervous system (neuritis, meningo-encephalitis, diffuse sclerosis); and (*b*) a number of psychoses, such as schizophrenia and post-infectious, senile, and pre-senile psychoses.

4. Some diseases associated with a disturbance of the trophic function of the tissues: (*a*) ulcer of the stomach and duodenum; (*b*) eczema.

In view of the clear-cut therapeutic effect recorded in the above diseases a vast-scale introduction of antireticular cytotoxic serum into medical practice of hospitals and civil medical institutions is deemed obligatory."

Clinical Evidence

The clinical evidence presented to the conference is of great interest. Reports have been received of many cases of slow-healing, invaliding gunshot fractures which have healed up within four or five weeks under the influence of the serum, so that the patients could return to the Army. No less numerous are cases in which the serum has increased the resistance of the organism, thereby favouring prompt recovery from various wound infections.

Prof. Linberg cites a case of gunshot wound of the thigh treated by Dr. V.: "The non-reactive course of the disease lasted about three months. After administration of the serum the course of the disease changed abruptly: there has formed at the site of the fracture a bone callosity." The case of Dr. Kotlfbaeva: "Patient Z.; gunshot arm-fracture. Absolutely no consolidation; after the first injection of the serum, complete consolidation." Prof. Alymova says: "No callus formation had been noticed in a young soldier four months after fracture of the thigh. Five days after injection of the serum excellent union occurred." Prof. Gorodinsky stated that a comminuted fracture of the thigh which did not heal during nine months united under the influence of the serum. The patient made a complete recovery. Prof. Mikhalovsky reported on the therapeutic effect of the serum in 24 cases of fetid coryza, which was commonly regarded as incurable.

Of great interest is the fact that under the influence of the serum cerebrospinal meningitis in adults assumes a very mild course similar to that occurring in children.

The antireticular cytotoxic serum proposed by me differs essentially from all other kinds of serum. Although its application is indicated in very different diseases it exerts only one kind of action—viz., in small doses it stimulates and in large doses inhibits the functions of the physiological system of the connective tissue. Since, as previously indicated, the physiological system of the connective tissue performs within the organism very important trophic, plastic, and defensive functions, its curative effect becomes quite comprehensible.

I was very well satisfied with the results of the conference, since they show that the above essentially new method of pathogenic therapy may prove of great use. It will accelerate the recovery of many soldiers of the Red Army.

* Report received by cable by the Anglo-Soviet Medical Council.

QUEEN'S INSTITUTE REPORT ON MIDWIFERY CASES

A report by the Queen's Institute of District Nursing on midwifery cases attended by Queen's Nurses and village nurse-midwives during the year 1942 shows very satisfactory results, particularly in view of the difficult conditions under which the midwives have worked. In spite of the tendency to enter hospital the number of cases has increased though fewer midwives have been available. The number of cases attended (no doctor engaged for the confinement) was 89,182 (increase of 1,276). The total number of midwives was 4,230, of whom 1,534 were Queen's Nurses and 2,696 were village and other nurse-midwives. Of the patients attended, 23,667 were primiparae. The number of maternal deaths was 104, a maternal mortality rate of 1.17 per thousand.

Analysis of Maternal Death Rates

Year	Puerperal Sepsis	Other Puerperal Causes	Total Puerperal Mortality	Non-puerperal Causes	Total Maternal Mortality
	Per 1,000 Live Births				
1940 ..	0·37	1·29	1·66	0·08	1·74
1941 ..	0·22	1·28	1·51	0·07	1·58
1942 ..	0·21	0·89	1·10	0·09	1·19
	Per 1,000 Total Births				
1940 ..	0·36	1·26	1·62	0·08	1·70
1941 ..	0·23	1·25	1·10	0·07	1·55
1942 ..	0·20	0·87	1·08	0·09	1·17

The number of times medical aid was sent for in 1942 was: for mother, 30,714 (34.4%)—that is, during pregnancy 6,090 (6.8%), during labour 21,313 (23.9%), and during puerperium 3,311 (3.7%); for infant, 5,516 (6.2%). The number of forceps cases was 4,495 (5%).

The causes of the 104 maternal deaths in 1942 were: sepsis (18 cases), accidents of labour (36), eclampsia (15), embolism (10), complications (17), non-puerperal (8). There were post-mortem examinations in 27.1% of the maternal deaths, as compared with 22% and 22.8% in the two previous years.

Maternity Nursing.—The number of cases attended (doctor engaged, midwife acting as maternity nurse) was 41,923. Among these the number of maternal deaths was 71 (1.69 per thousand); seven deaths (9.9%) were due to miscarriage. These being doctors' cases the details were not verified.

BRITISH MEDICAL JOURNAL

LONDON

SATURDAY AUGUST 14 1943

SULPHONAMIDE TREATMENT

"The Medical Use of Sulphonamides" is the title of M.R.C. War Memorandum No. 10,[1] published on July 30—a pamphlet containing in 46 pages as much practical information as the average full-scale book on its subject, with the added advantage of being completely up to date. The title may mislead: the word "medical" is not used in contradistinction to "surgical," but includes all forms of therapeutic use. This memorandum was prepared by a number of authors on behalf of the Therapeutic Requirements Committee and is defined as a "summary review of the clinical indications for some of the principal sulphonamide drugs, in the light of their present or potential availability in Great Britain, for the assistance of Service and other Departments and for the guidance of medical and hospital officers." The concern of this committee may be seen in this reference to the supply position, but in trying to ensure that those compounds which are in short supply shall be used to the best advantage the members have at the same time produced a general guide to intelligent sulphonamide therapeutics from which almost any clinician has something to gain. It begins with a chemical description of nine principal drugs, and lists some of their trade names, the use of which is emphatically condemned. A section on pharmacology follows, dealing with absorption, distribution, and excretion: this includes a valuable table of the solubilities in water, serum, and urine of eight compounds and seven acetyl derivatives, and information about acetylation, partition between red cells and plasma, and the concentrations usually attainable in the blood from given dosage. It deals also with one principle of fundamental importance—the essentially identical nature of the action of all sulphonamide compounds. It is wrong to suppose that, because one is indicated for this infection and another for that, there is any qualitative difference in action. More resistant bacteria demand treatment by the most active compounds, but otherwise the advantages of each compound depend on other factors, such as the ready solubility of sulphanilamide, the slow excretion of sulphadiazine leading to high blood concentration, and the poor absorption of sulphaguanidine—and still more of succinyl sulphathiazole—which enable them to reach the lower bowel. That all act in essentially the same way might be deduced, if no other proof existed, from the fact that acquired bacterial resistance to one compound is accompanied by an equivalent change in resistance to others.

Dosage is dealt with as a general question, and a full table is given of the amounts indicated as an initial dose and in the three succeeding periods (2 to 3 days, 2 days, 2 days) for four age groups and for both severe and moderate infections. The initial "loading" dose is emphasized, the necessity for continuing administration at night as well as by day, and the inadvisability of continuing treatment for more than 7 days in most cases: indeed, if improvement is not seen much earlier than this, careful inquiry should be made into the reason for it. This includes an estimation of the sulphonamide sensitivity of the infecting organism. It may be remarked that fully controlled treatment calls for laboratory services which are unavailable to most practitioners and would place a severe strain on the pathological staffs of many hospitals. The number of leucocyte counts which may have to be done if they are seriously looked upon as an essential safeguard against producing agranulocytosis is very large indeed, and if the progress of treatment must regularly or often be followed by estimations of the drug in the blood this also means a very serious bulk of laboratory work in any large hospital. The estimation of the sulphonamide sensitivity of a particular micro-organism will much less often be necessary, but is a rather more troublesome and generally unfamiliar procedure. These are therefore by way of being counsels of perfection at a time when pathological man-power is so depleted. But this is not to say that every endeavour should not be made to secure such aids to treatment when they are feasible. It is well known that irregular absorption, vomiting, and varying degrees of acetylation may affect the blood concentration attained, and an estimation of this should be the first step in the further investigation of a case not responding to treatment.

The treatment of individual conditions is discussed under 13 main headings, with much shorter sections on 16 others. Other necessary treatment is briefly mentioned when sulphonamides are not to be relied on alone. The order of preference among various compounds is given for each condition, and this involves so many choices on only scanty statistical data that they are presumably not claimed to be infallible. Sulphathiazole is given as the first choice both for cerebrospinal fever and for other forms of purulent meningitis, although it is mentioned that the concentration of this compound attained in the cerebrospinal fluid is only 15 to 40% of that in the blood, whereas the corresponding figures for sulphapyridine and sulphadiazine are 50 to 70% and for sulphanilamide 90 to 100%. It is commonly believed that sulphathiazole is contraindicated in meningitis for this reason, and if in the authors' opinion its greater activity counterbalances this drawback it would have been helpful to say so in so many words. Pneumonia and urinary tract infections are subdivided according to their bacteriology: here, of course, is a province of treatment in which laboratory aid is essential, and it should be much more widely known that, though quite small doses of most sulphonamides will usually clear up most coliform infections of the urinary tract, some are more resistant, and infection by enterococci is totally so, calling for mandelic acid treatment. There is an extensive section on venereal diseases which includes information, based on both laboratory and what may be called field experiments, that sulphonamide compounds are efficient prophylactics against gonorrhoea and chancroid. The sections on wounds and burns are also very full and include detailed instructions for local application. Intestinal infections are discussed under six separate headings, and this section contains much information which is by no means common knowledge. Among diseases noted more briefly are those in which sulphonamide treatment serves only to control secondary bacterial infection, and various less familiar or imperfectly studied conditions: the attitude to the treatment of anthrax is perhaps unduly sceptical. In a full account of toxic reactions it is said of the prevention of urinary obstruction by acetyl compounds that the daily urinary output should be maintained at not less than 1,500 c.cm. This sensible and moderate caution should be well heeded. Fluids are often forced to such an extent in order to prevent this complication that therapeutic effect is greatly impaired—it is of no use to give large doses of the drug if steps are also taken to secure elimination of maximum rapidity. An appendix gives methods for estimating sulphonamide compounds in the blood, for testing the sulphonamide sensitivity of bacteria, and for sterilizing sulphanilamide powder

[1] H.M.S.O. 1943. (9d.)

for local application. The Medical Research Council is to be congratulated on producing another memorandum of great practical value, with perhaps a wider field of usefulness than any of its predecessors.

PAVLOVIAN PHYSIOLOGY AND WAR NEUROSIS

Front-line experience of psychological breakdown has not hitherto bulked largely in the literature of war medicine. A paper by Love[1] on his experiences at Tobruk is therefore especially interesting, the more so because in spite of his isolation from books in the field he attempts certain theoretical formulations which are of a suggestive kind. It is notable that the number sent back to their units in what is described as "good or fair shape" is only 44%. This is less than half the percentage claimed by such observers as Gordon Holmes and William Brown in their experiences in the last war. What may be the significance of the difference from the results described by such an unexpected twin constellation of authorities raises tantalizing conjectures. Love remarks that age as a factor is of importance, those individuals who are over 35 at the time of their breakdown being less apt to return to duty. The now well-recognized fact that psychological predisposition accounts for a good deal is again illustrated in the observations that 12.7% had had a previous nervous breakdown, and 21% some other form of psychological disability before the war. With Tobruk under bombardment treatment was limited by the resources obtainable to such rest as was possible, with sedation and encouragement, and occupational and physical training. The advantages of group activity were apparent; but so also were the disadvantages of association with a certain proportion of individuals who had lost control over their fear. It was regarded as of special importance to obtain enough sleep by means of whatever sedatives were available. This must have been one of the most difficult situations in which psychiatric treatment has ever been carried out.

In regard to prevention, Love emphasizes the importance of the regimental medical officer and the need for educating all Service doctors in psychiatric matters. On the theoretical side his suggestions are interesting. He recognizes, what all Service doctors have to recognize, that there is a constitutionally timid type of man, but it is especially his analogies from Pavlovian physiology that are worthy of notice, although there is a deceptive ease with which such analogies can be applied. Thus the conception of fear as a reflex is adopted, and the increasing susceptibility to fear is spoken of by Love as due to a facilitation of this reflex with resultant spread to more and more stimuli; while, on the other hand, in the sounder type of man the fear "reflex" is regarded as inhibited as the result of experience—or, in Pavlovian language, as the individual's cortex analyses the stimuli. Two other analogies from Pavlovian physiology are adduced. Love suggests that the prolonged attempt at inhibition of fear ultimately led to a neurosis, just as in the Pavlovian dog an attempt at prolonged inhibition may end ultimately in failure, with the appearance of so-called neurotic symptoms in the dog. Fine differentiation of stimuli, as Pavlov demonstrated, produces the same result. Such analogies are certainly seductive. Delayed inhibition, for example, might conceivably correspond with the latent period so often seen in the development of a neurosis in a frightening experience. The author himself, however, is very cautious in advancing these suggestions. The well-known fact that experience of a trying kind may be followed by an emotional reaction when any reminder of the original experience occurs is more scientifically stated in the terms of association psychology than of conditioned reflexes.

Human beings, unlike Pavlovian dogs, are not concerned with sensations like sounds to be differentiated, or with reactions to feeding stimuli—i.e., to stimuli on the physiological level—so much as with ideas and meanings in social situations, with which prestige, self-esteem, and so on, are closely bound up. Nor in human beings are the stimuli immediate; they are more often representational. Pavlov himself, in an obscure passage on war neuroses, seemed to recognize this when he spoke of fear producing certain physiological symptoms, which in "weak people" last for some time, thus "freeing them from the necessity of endangering their lives." He speaks also of such people as "excluding the influence of other representations which might oppose the representation of the conditioned desirability of these symptoms." "Conditioned desirability" is surely a question-begging notion. Many of the Pavlovian physiological notions, as Schilder and others have pointed out, are concepts rather than observed phenomena, and allow nothing for mental "sets": that shifting in attitude, coming about sometimes only after a prolonged moral struggle, which changes a timid creature into a brave man—a result often brought about by the example of someone else, or by any one of the numerous factors included in the term "morale."

The author speaks of the association with a group of others as a process of "deconditioning"; but it is something a good deal more subtle than is represented by this dangerously attractive word. The application of Pavlovian physiological principles to social phenomena reaches its zenith of absurdity in the master himself when he cites the Christian martyrs as proof of the power of autosuggestion, with the explanation of their behaviour as "the effect of the concentrated excitation of a definite area of the cortex accompanied by marked inhibition of the rest of the cortex." This *may* be good physiology, but as a contribution to all-round understanding of life this kind of wild analogy is a step backward into the materialistic abyss. Love is more than an appetite, and a war neurosis more than a stimulation of the fear "reflex."

[1] *Med. J. Austral.*, 1942, **2**, 137.

CONTINUOUS CAUDAL ANAESTHESIA IN OBSTETRICS

It is all but 100 years since Sir J. Y. Simpson attempted by anaesthesia to abolish the pains of labour. His method was good but not ideal, and to this day search goes on for methods that are easier, safer, and more certain. The latest is caudal anaesthesia—that is, the injection of a local anaesthetic into the cavity of the sacrum. The injection is extradural, but fluid so introduced will infiltrate to surprisingly high levels, so that the roots of the lumbar and even the dorsal nerves may be anaesthetized. Caudal, or sacral, anaesthesia is by no means new; it has for many years been used for various surgical purposes. From time to time it has been advocated in obstetrics, notably by Pool,[1] who in 1941 published results of a full investigation of this method. He found that with novocain (procaine) results were too fleeting to be of value in obstetrics, but on changing to a solution of nupercaine (then called percaine) in saline he obtained analgesia of satisfactory duration. Caudal anaesthesia in obstetrics is at present being tried enthusiastically in many clinics in the U.S.A. Hingson and Edwards[2] found that the disadvantage of the relatively brief duration of anaesthesia could be overcome by repeating the injections at short intervals. A special

[1] *J. Obstet. Gynaec. Brit. Emp.*, 1941, **48**, 84.
[2] *J. Amer. med. Ass.*, 1943, **121**, 225.

malleable needle is passed into the sacral hiatus and is allowed to remain in position throughout labour. Normally the dural sac does not extend lower than the second segment of the sacrum, but in exceptional cases it may extend further, thus constituting a danger, for injection of a large quantity of an anaesthetic drug into the cerebrospinal fluid may be followed by grave or even fatal results. After insertion, suction is applied with a syringe to determine whether the dura has been entered. If cerebrospinal fluid is not obtained, an apparatus is then connected by means of which injections can be given repeatedly without further disturbance to the patient. It has been found that the most suitable anaesthetic substance is metycaine—gamma-(2-methyl-piperidino)-propyl benzoate hydrochloride (Eli Lilly and Co.). This is used in 1.5% solution, and not more than 8 c.cm. is at first injected in order to test the patient's tolerance. If all is well a further 22 c.cm. is then injected, and this dose is repeated at 45-minute intervals, depending upon the effect obtained. The authors report the results achieved in 589 cases. Usually pain was relieved in about 10 minutes. The injections were repeated over periods averaging 7 hours, the longest being 30 hours. No serious disadvantages are mentioned, and it is stated that forceps delivery, breech delivery, perineal incision and repair, could all be carried out without additional anaesthetic. Gready and Hesseltine[3] also report a series of 22 cases dealt with by this method. Satisfactory anaesthesia was obtained in all but three. In one case the patient, after the initial injection, went into a state of collapse for 30 minutes. More recently Gluck and Rochberg[4] report a series of 35 cases in which procaine (novocain) 1% solution was used for continuous caudal anaesthesia. They preferred to give the injection by a continuous drip method, following the technique used for blood transfusion. Complete relief of labour pain was attained in all cases. The forceps rate was high, but it is stated that the operation was in most cases "elective." In one case symptoms were severe. The patient lost the power of speech and later collapsed. Artificial respiration was required for 45 minutes, after which recovery took place, and 10 hours later the patient was delivered of a living child. These workers also report that during the puerperium the patients often complained of severe backache, and in one or two cases they "may have developed a neuritis." The earlier report by Gready and Hesseltine also mentions two cases of severe pain in the back and legs "after the drug wore off."

From these reports it is clear that caudal anaesthesia is effective in relieving the pains of labour. In cases observed in this country the striking feature has been the rapid change in the patient's appearance and mental condition, so that a woman wearied with labour and making "heavy going" in the second stage exclaims with relief when she finds that her suffering is lifted. Although reports are conflicting, it seems probable that labour is lengthened for the reason that spontaneous bearing-down efforts are absent or at least diminished. But the chief deterrents to the wide use of caudal anaesthesia are the possibility of sudden collapse and the fear of remote sequels. Despite precautions, the drug may be inadvertently injected into the cerebrospinal fluid, and even if this is avoided individual susceptibility to anaesthetic drugs cannot be foretold. Finally, it is a sobering thought that serious damage—even meningitis—may result from the introduction of septic organisms into the sacral canal. The procedure requires skill and experience, and throughout treatment the patients must be kept under constant supervision by a trained anaesthetist. Nevertheless, in suitable cases and in suitable surroundings caudal anaesthesia relieves the pain of labour, and should be considered for patients who are approaching mental or physical exhaustion and in whom it is necessary to allow labour to continue for several more hours before delivery can be safely effected.

[3] *J. Amer. med. Ass.*, 1943, **121**, 229.
[4] *Amer. J. Obstet. Gynec.*, 1943, **45**, 645.

THE HAEMATOLOGIST'S HERBAL

Shakespeare tells us that when Antony was defeated and driven starving from Modena, "his palate then did deign The roughest berry, on the rudest hedge." We too have had to make use of the natural fruits of the countryside in this time of drug shortage, for some of them are rich in vitamins. The Vegetable Drug Committee of the Ministry of Supply, with the co-operation of 47 county committees and an army of voluntary workers, attacked the hedgerows with such vigour last year that a total of 400 tons of rose hips was collected. This should be a valuable addition to the country's store of antiscorbutics, for the rose hip rivals the blackcurrant as a source of vitamin C.

The rose hip was also one of the original sources of the capillary permeability factor, vitamin P, which has more recently been shown to be present in high concentration in blackcurrants.[1] It would be idle to pretend that we have any clear idea yet of the significance of vitamin P in health and disease. While it seems now to be agreed that the capillary-resistance test is of no value in assessing the state of vitamin C nutrition, and that the test is rarely positive in fully developed scurvy,[2] the action of vitamin P on the capillaries remains disputed. A recent report suggests that, whereas vitamin P modifies the effects of negative pressure on the capillaries, it does not influence the effects of positive pressure.[3] The negative-pressure test has been successfully applied to the guinea-pig as a method of biological assay of vitamin P.[4] A new outlook on this vitamin is offered by the report[5] that it occurs in the tissues of the plant in combination with a protein, as part of a tissue enzyme system, a chalcone–protein complex. A chalcone is an unsaturated aromatic ketone, and the hesperidin chalcone of vitamin P is a member of that class of naturally occurring substances capable of being reversibly oxidized and reduced. The chalcone–protein complex is easily reduced by sodium thiosulphate and re-oxidized by oxygen, and it can also act as a hydrogen transporter. It is possible that vitamin P is concerned with the mechanisms of hydrogen transportation and energy production in animal tissues as well as in plants. We can say, then, that natural antiscorbutics, which usually contain vitamin P as well as C, are plus a little something which the synthetic vitamin C hasn't got, and which may well be a therapeutic advantage.

Yet another natural source of antihaemorrhagic material is now suggested. The berry of the mountain ash, *Sorbus aucuparia*, has been used as a spring tonic by the Laplanders for many years. The United States Dispensatory describes the *Sorbus* fruit as having been used for scurvy, and American workers[6] report that it contains appreciable amounts of ascorbic acid and manifests vitamin K activity. They also suggest that it is of value in the medical treatment of cholecystitis. The claim for vitamin K activity is well supported. The evidence that it relieves the symptoms in chronic cholecystitis is less convincing, as the effects on the symptoms of indigestion were not adequately controlled. Another proposed addition to the haematologist's herbal is shepherd's purse, *Bursa pastoris*, extracts of which have

[1] Pollard, A., *Nature*, 1942, **150**, 490.
[2] McNee, G. Z. I., and Reid, J., *Lancet*, 1942, **2**, 538.
[3] Bell, G. H., *et al.*, ibid., p. 536.
[4] Bacharach, A. L., *et al.*, *Biochem. J.*, 1942, **36**, 409.
[5] Wawra, C. Z., and Webb, J. L., *Science*, 1942, **96**, 302.
[6] Shinowara, G. Y., *et al.*, *J. Lab. clin. Med.*, 1942, **27**, 897.

been reported by Copley and Lalich[7] to produce improvement in haemophilia when given by injection. Similar claims have been made by Hecht[8] on behalf of a proprietary herbal extract which is administered by injection. It is known, however, that both sodium citrate[9] and oxalic acid[10] increase the coagulability of the blood when given parenterally, apparently by making the prothrombin more reactive. Haemostatic effects from injection of plant extracts must therefore be assumed to be due to the oxalic acid they contain unless the contrary is proved, and in any event such effects are much less important in time of war than those of natural antiscorbutics which can be given by mouth.

FOOD AND HEALTH OF ESKIMOS AND LAPPS

Eskimos of Northern Greenland, protected by the Danish administration from harsh contact with civilization, still lead a primitive existence. Their diet, entirely carnivorous, consists of the flesh, glandular organs, and often entrails, usually eaten raw, of Arctic mammals, birds, and fish. Their life of great physical activity, in which privations and extraordinary feats of strength and endurance are taken as a matter of course, testifies to the adequacy of this diet, and medical evidence[11] has demonstrated the absence of scurvy and rickets and no increased tendency to vascular and renal disease. The Labrador Eskimos, who have more dealings with whites, have largely abandoned their primitive methods of existence: dried potatoes, flour, tinned goods, cereals, and cereal products form a considerable part of their diet. Their meat is cooked, and, though Labrador is not truly Arctic, vegetables cannot be grown. As a result, scurvy, rickets, and a combination of the two are universal and severe.[11]

Interesting information has recently come to hand about the health and food habits of another primitive northern race, the Lapps. These people, whose origin is still obscure, number now some 30,000. They are found in Norway, Sweden, Finland, and Russia, and are chiefly engaged in reindeer raising. A large proportion of the Swedish Lapps have retained the old nomadic habits. These Lapps were originally mainly carnivorous, and reindeer flesh was the chief constituent of their diet. The meat was eaten boiled: liver, heart, kidneys, and bone marrow were boiled for a very short time; blood was usually consumed raw. Reindeer milk was freely taken. Birds, birds' eggs, and fish were also eaten. The bark of young green pines, fresh shoots of spruce and pine, and various herbs, roots, and berries were eaten, and birch sap was drunk in the spring. The fare has now changed a good deal. There has been a transition from the old intensive method of reindeer raising to the extensive. The animals are now mainly looked upon as slaughter animals, and milking has been almost entirely abandoned. Home consumption of reindeer meat and offal has declined, as more is sold or given to dogs. Sausage and tinned meat are purchased instead, and some cow's milk is used. Rye bread, wheat flour, cereals, and potatoes form now an important part of the diet, and coffee and sugar are taken in relatively large quantities. Ekvall[12] reports that some 50% of the Swedish Lapp children have rickets, and he noticed after-effects of rickets in some adults. He observed no cases of manifest scurvy but many indications of the latent disease. Severe caries is common in young adults, but old Lapps have better teeth, and the Lapps are unanimous in the opinion that caries has increased of late. There is no hemeralopia, but conjunctivitis, probably caused by smoke in the huts, is not unusual. Neuralgic myalgia is common in old and young, and arthritis deformans was noticed, but Ekvall found no acute or chronic rheumatic polyarthritis in nomadic Lapps, neither had any nomads been treated for this disease in the last ten years at Umea Hospital, though some settled Lapps had been admitted. This may not be unconnected with the small incidence of catarrhal infections of the air passages, tonsillitis, or pneumonia. Tuberculosis is no more prevalent among the Lapps than among the rest of the population, and Ekvall saw no organic disease due to valvular trouble, no nephritis, no pernicious anaemia, and no diabetes mellitus. Dyspeptic troubles and neuroses with depressive features are not uncommon. In the old days of barter, spirit drinking used to be very prevalent among Lapps, but the religious revival in the second half of the nineteenth century put a stop to it and alcoholism is no longer a menace.

Nevertheless, the fact remains that the diet of these people is not now what it should be, and the observations of Thomas and of Ekvall show how easily can the delicately poised balance of an exclusively or predominantly carnivorous diet be upset. In high latitudes the danger of scurvy is ever present; raw skin, liver, and flesh of Arctic animals, and, further south, odds and ends of the sparse vegetation, are the only natural antiscorbutics. Also, unless fish is taken freely by the mothers and given to children from an early age rickets is bound to occur. These primitive people can live off the land in health and vigour, but their diet does not easily lend itself to dilution with the energy foods of civilized man.

RESPIRATORY FUNCTION OF THE DIGESTIVE TRACT

In a paper on the respiratory function of the digestive tract[1] J. G. Dillon reaches some conclusions which are of medico-legal importance. From *x*-ray studies he concludes that air enters the stomach and intestines of the newborn and adults during the inspiratory movements of the thorax, and that swallowed air has no substantial significance. The opening of the oesophagus into the stomach depends not on an oesophageal sphincter but on the sphincter-like action of the diaphragm at this point. The muscular and tendinous prolongations of the diaphragm form a typical pinch-cock, which allows food to enter on expiration. According to several observers a negative pressure is produced in the oesophagus and in the stomach by inspiration, and this draws in air. Thus everyone has a gastric respiration as well as pulmonary respiration, and the presence of air in the digestive tract of a newborn child can serve as a proof of extra-uterine respiration and hence as evidence that the infant was born alive. The *x*-ray examination of a stillborn foetus at any time of its uterine life never reveals any traces of air in the digestive tract, but that of a dead foetus which has breathed after birth, even for a very short time, always discloses the presence of air in the stomach and intestines. Even when the lungs are not expanded after birth by a short-lasting effort at respiration air will be found in the digestive tract. An efficient *x*-ray examination is, then, a most reliable and sensitive test of a foetus having been born alive and affords documentary evidence. Dillon states that air which is loudly eructated by adults has not been swallowed but has been drawn into the stomach by inspiration; the term "aerophagy," he claims, should then be replaced by "gastrospiry." Ventriloquists, as is known, use the stomach as an aerial reservoir; it is filled with air by inspiration and emptied during speech. An invalid whose larynx has been destroyed by cancer learns to use this manner of speech.

7 Copley and Lalich, *Amer. J. med. Sci.*, 1942, **204**, 665.
8 Hecht, E., *Acta med. scand.*, 1941, **109**, 155, 177.
9 Shafiroff, B. G. P., *et al.*, *Proc. Soc. exp. Biol.*, N.Y., 1941, **48**, 136.
10 Blain, A. W., and Campbell, K. N., *Arch. Surg.*, 1942, **44**, 1117.
11 Thomas, *J. Amer. med. Ass.*, 1927, **89**, 1559.
12 *Acta med. scand.*, 1940, **105**, 329.

1 *Amer. J. Roentgen.*, 1942, **48**, 613.

BRITISH SURGEONS' VISIT TO U.S.S.R.

IMPRESSIONS OF SOVIET MEDICAL ORGANIZATION

The four British surgeons who have been paying a three-weeks visit to Soviet Russia attended a reception given in their honour by the British Council immediately upon their return, and gave the assembled company some account of their experiences. This British mission was sponsored jointly by the British Council and the Medical Research Council, and its members were Surg. Rear-Adml. G. Gordon-Taylor, consulting surgeon to the Royal Navy; Mr. E. Rock Carling, consultant adviser to the Ministry of Health, the Ministry of Home Security, and the Ministry of Pensions; Major-Gen. D. C. Monro, consulting surgeon to the British Army (War Office); and Mr. R. W. Watson-Jones, civilian consultant in orthopaedic surgery to the Royal Air Force. Two American surgeons, Lieut.-Col. Elliott and Lieut.-Col. Loyal Davis, and a Canadian surgeon, Prof. Wilder Penfield, accompanied them.

The visitors during their short stay in Russia inspected hospital arrangements as far forward as Vyazma on the Western front, visited the clearing, field, and mobile hospitals, and inspected the medical institutes and depots in Moscow. They found the organization of Russian medical services excellent. In their surgical work the Soviet medical service, with some differences in detail, follows the same general principles as those accepted in British war surgery, and has reached the same conclusions. The Commissar in charge of the service stated that at the time of the last war the Russians realized that their arrangements were not as good as those of their allies, and during the twenty-five years between the two wars they have set themselves to reach a standard of medical and surgical work which will bear comparison with that of any other belligerent country.

Two Impressive Organizations

Two points impressed the mission very greatly. One was the system of blood transfusion, which is carried out on a colossal scale. The arrangements for the collection of blood are beyond criticism, and the number of voluntary donors is very large. In one institution in Moscow a daily average of 500 to 800 donors are bled, and 90% of them are women. No woman is allowed to be bled more than seven times a year, but in practice, so large is the number of volunteers, they are not bled more than five times. They receive extra rations and also payment, but four-fifths of the money received is returned for war purposes. The same procedure is followed as in this country in the use of plasma and serum. In no circumstances has the Russian Army lacked transfusion blood. The blood is transported to the front by large aeroplanes and then to outlying parts by small aeroplanes. At one place on the front blood has actually been flown to small collections of wounded behind the German lines. The second point was the organization for getting special cases into the hands of specialists at the earliest possible moment and in the condition in which they liked to receive them. Even as near to the front as eight or ten kilometres the different kinds of cases according to the nature and location of the injury are segregated and placed in the hands of junior specialists, who, after early treatment, pass them on to their seniors at the special hospitals. There appears to have been no shortage of dressings or anaesthetics. The Russians rely almost entirely on local and spinal anaesthesia.

Training of Personnel

As for the medical personnel, the chief of the medical services of the Russian Army, General Smirnov, is 35 years of age, and an expert opinion on him given by an academician was that he not only was an admirable administrator but was held in the highest regard by his colleagues from the professional point of view. The medical service is becoming a woman's service; 90% of the doctors now under training are women, as compared with 50% in peacetime. The mission noted that some of the young women doctors carried as many as five wound stripes, which meant, not that they had received five wounds, but that they had been wounded five times. For doctors in Russia the ordinary course before the first State qualification is five years, comparable with our own requirement. It takes three years to get a bachelorship and three more years to get a doctor's degree. Nurses had three years' training before the war, and this is now reduced to two years.

The Russian nurse evoked the great admiration of the visitors. Not only is she excellent at the job for which she has been trained, but she can turn her hands in spare time to any employment, even to building hospitals, involving cutting down trees, squaring timber, making window and door frames, digging out foundations. She is specially expert in the art of camouflage. One of the members of the mission described how their car stopped at a place in the forest where, apparently, no building was in sight. Slowly it dawned upon them that they stood at the entrance to a 1,000-bed hospital so camouflaged as to appear part of the forest itself. Some of the trees had even been left standing inside the building, their tops growing out of the roof.

The visitors made as extensive an inspection as was possible during their brief stay, and only shortness of time prevented them from going to the Far East, where the convalescent cases are sent. They saw something of the research institutes and medical organization in Moscow, where the civil defence and ambulance arrangements impressed them. Five telephone operators are detailed every night to deal with emergency medical or surgical calls from any part of the city, and within two minutes of the receipt of the call a well-equipped ambulance, with doctor, nurse, and orderly, is on its way. In the control room there is an immense map of Moscow; on receipt of a call a button is pressed for the name of the street, and the street then appears illuminated on the map, and the nearest ambulance station and the quickest route are at once indicated.

It is hoped that a return visit of Soviet surgeons to this country will be arranged.

THE MASS RADIOGRAPHY SCHEME

A conference of the National Association for the Prevention of Tuberculosis was held in London on July 28 and brought together a very large assembly of delegates from all parts of the country. It was addressed by Mr. ERNEST BROWN, Minister of Health, who said that the attack on pulmonary tuberculosis had been intensified by the introduction of mass miniature radiography and by the new scheme of allowances for persons undergoing approved treatment for pulmonary tuberculosis. The total cost of the two schemes when in full swing would be about £3,000,000 a year, and by the end of September thirty-four county councils and fifty-five other authorities would have adopted the family allowances scheme.

Introducing the subject of mass radiography Wing Commander R. R. TRAILL said that it had been proved that this system made it possible to discover the disease before it reached dangerous proportions or destroyed the reserve line of natural resistance. When more apparatus was available it would be possible to make a periodical review of the supposedly healthy at those ages at which they were specially liable to develop the disease. Surgeon Commander FITZPATRICK gave an account of the system as adopted since 1939 in the Royal Navy. It was possible to examine 600 cases a day with one apparatus. Dr. P. M. D'ARCY HART mentioned a survey of 15,000 people engaged in industry. Arrangements for mass radiography among civilians must differ from those for Service personnel inasmuch as the examination was on a voluntary basis. In factories the co-operation of the management must be obtained and the shop stewards instructed.

Dr. F. R. G. HEAF (assistant medical officer, L.C.C.) referred to the need for prosecuting the examination and relieving any anxiety on the part of the individual without at the same time setting up an invalid neurosis. In the case of persons who had to undergo sanatorium treatment he suggested the adoption of the prophylactic workshop scheme, which had had considerable success in Russia.

Co-operation with General Practitioners

Dr. C. H. C. TOUSSAINT (clinical tuberculosis officer, Bermondsey) said that it was wrong to suppose that tuberculous persons did not seek advice. Many of those who were referred to the tuberculosis officer would be found to have been visiting their own doctor, off and on, for perhaps a year. It was important to enlist the full co-operation of the general practitioner if the scheme was to have its full value. He described what he in Bermondsey and his colleague, Dr. E. K. Pritchard, in Southwark had done by investigating,

with the help of the general practitioners of the district, groups of persons who had been complaining of minor symptoms. Among these, of course, there was a much higher proportion of chest abnormalities of all sorts as well as a higher proportion of cases of active tuberculosis than among the examinees in general. Dr. PRITCHARD said that the results of this work in Bermondsey and Southwark had been encouraging, and no difficulty had been experienced in co-operation. In view of the fact that tuberculosis still carried with it a certain social stigma he thought it a pity that the scheme should have been announced simply as a means of discovering tuberculosis, because this might act in some cases as a deterrent to those who would otherwise seek examination. It should have been presented as a means of discovering in addition to tuberculosis other chest conditions which needed urgent treatment.

Dr. PETER KERLEY, who wound up the discussion, mentioned some opposition to mass radiography. One argument advanced against it was lack of mobility of the apparatus, but in fact the apparatus was quite easily moved from place to place, and he did not think it could be made more mobile than it was at present. Objection had been made to mass radiography on the ground that there would be a spate of wrong diagnoses and thus a condition of "tuberculosis neurosis" would be encouraged. But, in fact, the diagnostic technique with the new films was far superior to that which went with many of the large *x*-ray films taken in this country to-day. He suggested that part of the E.M.S. organization might be turned over to deal with early tuberculous cases.

FUTURE OF THE VOLUNTARY HOSPITALS

Some timely observations on the part played by voluntary hospitals in our national life were made by the DUKE OF GLOUCESTER when he presided (for the first time) at the recent annual meeting of the King Edward's Hospital Fund for London. Referring to the discussions now taking place on the future of hospital services, he said that voluntary hospitals afforded an opportunity to many thousands of people to take a practical and personal interest in the welfare of the patients, whether by voluntary contributions in money or kind, by contributory schemes or works funds, or by service ungrudgingly given on committees and boards of management. Voluntary activities such as these, which lifted the individual out of the sphere of his or her own personal interests and offered a means of service to the community, should be encouraged and preserved. They were part and parcel of the democratic structure of society, and upon their interaction with the official provision through the State and local authorities depended the power of the whole system to grow and adapt itself to changing conceptions of the public need. On the medical side there were the important elements of freedom and elasticity. Central supervision and co-ordination should leave room for those whose ideas might not immediately commend themselves to those in authority. The Duke recalled the opposition to Lord Lister and other innovators in their day, and wondered whether the opposition would have been insurmountable under a hospital system conforming too closely to an established scheme. Voluntary hospitals, he continued, did afford that most essential element of freedom, and it would be sad if in our anxiety to achieve other objectives this precious thing were to disappear. In the meanwhile the Fund was helping the Ministry of Health to collect the data necessary for its survey of the hospital services.

Among other matters to which the Duke referred was the appointment of Prof. J. C. Drummond as chairman of a special committee to give advice and assistance on diet to any hospitals seeking such help. The Distribution Committee of the Fund has prepared a memorandum on the supervision of nurses' health. This and an investigation of hospital diets (hospital feeding affects nurses as well as patients) reflect the Fund's interest in the welfare of nurses. Finally, the Duke announced that Dr. H. Morley Fletcher had been appointed chairman of the Nursing Recruitment Committee in succession to Lord Luke, and Dr. A. M. H. Gray to be a member of the Distribution Committee.

Lord Dawson on Present Plans

Lord DAWSON OF PENN said that the medical service must be run by those who understood it—doctors, nurses, hospitals—who must have a primary say in what the design of the service should be. To pull down the whole structure of medicine and in the course of two years to rebuild it would be a disaster. There were a number of people in this country who conscientiously held views which would amount to the uprooting of that structure. The foundations could be built now, and the chief of those foundations was the hospital service. The Minister of Health had altered his reference since the scheme was first launched. It originally concerned hospital service—at least that was the impression of the public—but the aim now was a health service. This meant—what many had wanted for years—the bringing together of preventive and curative medicine, not only in every hospital but in the education of medical students. It would need two years to work out and lay down the foundations of this great scheme, which meant also the bringing together of municipal or local government hospitals with voluntary hospitals in agreed areas. Those areas had yet to be determined, and, when determined, each should have a key hospital. One of the difficulties was that probably from a constitutional point of view the ultimate administrative authority had to be something in local government. A large body of skilled people spent their whole lives studying the cure and prevention of disease, and care should be taken that they were not placed under a lay committee not necessarily experienced in hospital affairs. The idea of the voluntary hospitals was to provide an advisory council at the elbow of each local authority and make it statutory for the local authority to consult with that body on all questions of policy.

Mr. ERNEST BROWN, Minister of Health, who was also present at the meeting, said that the confidential discussions on the future health and hospital services had ended. The next phase would be the presentation of a White Paper. This was necessary if the public was to understand all that they wanted to do for the nation and to be assured that it was being done in the right way. After adequate discussion in Parliament and in the country on the basis of the survey and the White Paper, it would be for the Government to make up its mind what form legislation should take. He thanked the King's Fund for all the help it had given in discussions with him.

SURVEYS OF HOSPITAL SERVICES

At the recent quarterly meeting of the Regionalization Council of the Nuffield Provincial Hospitals Trust a report was received on the surveys of hospital services in provincial areas which the Trust, as the agent of the Ministry of Health, is organizing and financing. The Trust has organized surveys for the major portion of the country, and is directly associated with those in seven areas. Two surveys are being undertaken by the Ministry of Health—the London and the North-Western areas. Hospital services in South Wales are being surveyed by the Welsh Board of Health. The surveyors appointed by the Trust are:

North-Eastern, Sir Hugh Lett, Dr A. E. Quine. *Yorkshire*, Sir H. L. Eason, Dr. R. Veitch Clark, Mr. W. H. Harper. *Eastern*, Sir William Savage, Mr. C. H. S. Frankau, Sir Basil Gibson. *Birmingham/West Midlands*, Mr. J. B. Hunter, Dr. R. Veitch Clark, Sir Ernest Hart. *Berks, Bucks, and Oxon*, Prof G. E. Gask, Prof. R. H. Parry, Mr. E. C. Bevers. *Sheffield/East Midlands*, Prof. L. G. Parsons, Dr. G. E. Godber, Mr. S. Clayton Fryers. *South-Western*, Mr. V. Z. Cope, Dr W. J. Gill, Mr. A. H. Griffiths. *South Wales and Monmouthshire*, Prof. J. A. Nixon, Prof. R. M. F. Picken, Dr. A. T. Jones.

A survey is to be undertaken in Northern Ireland and will follow the main lines of those in England but will include mental hospitals and mental deficiency institutions as well. The surveyors are: Lieut.-General Sir William MacArthur, Dr. Stanley Barnes, Dr. Duncan G. Leys.

The council had before it suggestions for the establishment of Group Preliminary Training Schools for Nurses, and it decided to recommend the Trustees to consider financial support which will be available for the development of such training schools. The council was advised that, with the substantial financial assistance of the Trust, regional health and sickness bureaux have been established in the Berks, Bucks, and Oxon and Glasgow areas. It is hoped that the bureau in the Berks, Bucks, and Oxon area may be accommodated in the Institute of Social Medicine at Oxford, and that it will be under the immediate direction of Prof. J. A. Ryle, Director of the Institute. In Glasgow a subcommittee has been formed with a view to starting the scheme in the North-West sector of the city, which includes the Western Infirmary and the Stobhill Hospital. The University is to provide accommodation for records, and the public health department to help with tabulating the data.

Reports of Societies

LIGHT AND VISION

After the annual general meeting of the Illuminating Engineering Society Sir JOHN PARSONS, F.R.S., F.R.C.S., gave an address on light and vision. In his opening remarks he recalled his presence at the inaugural dinner of the Society in 1909, and the recognition of the founder, Mr. Leon Gaster, that the aims of the Society were not limited to physical problems, but involved physiological, psychological, and aesthetic factors. At that time there was little guidance on lighting matters from the medical side, but engineers had themselves few data, and instruments for measuring illumination were primitive and cumbersome. The first paper read to the Society in 1910 was given by Sir John Parsons on the subject of glare, and the Society had since been preoccupied with this and similar problems involving vision. Sir John next discussed the relation between illumination and visual acuity, drawing attention to the valuable work of Dr. Lythgoe and others and the development of the Illuminating Engineering Society's Code. Research had established the great importance of background and adequate contrast. It was interesting to note that in the early days of the Society a limit of 100 to 1 for the ratio of brightness of object and background was proposed. Turning to the colour of light Sir John expressed the view that there was no evidence that artificial sources furnishing so-called "white light" caused any harmful effects. The injurious effects of ultra-violet light in everyday life had been grossly exaggerated and the craze for "daylight" lamps had been unwarranted, though the recent development of fluorescent discharge lamps had substantial advantages. Much of the latter part of the address was devoted to vision at low illuminations, the peculiar appearance of colours in weak light, and the conditions determining the perception of objects at the very low illuminations now experienced in the streets in wartime. Sir John referred at some length to the work of the Departmental Committee on Lighting in Factories and Workshops and to the fact that legislation on factory lighting, recommended before the last war, had been enacted only during the present one. The requirements for adequate lighting in factories had now been incorporated in the Factory Act, and this might serve as a precedent for the future, when lighting conditions in schools, offices, etc., might likewise be defined and standardized. The recognition of the I.E.S. Code during the war had been largely due to the fact that it was ready when needed. Now, therefore, was the time to complete codes and specifications relating to other fields of lighting. The address ended with a brief reference to the problems awaiting the Society in connexion with post-war lighting, in which again the study of vision would be found to play an important part.

Psychiatrists of the U.S.A. and Canadian Forces in this country were recently entertained by the London County Council at Sutton Emergency Hospital. Short papers were read as follows: Dr. Minski on "Rehabilitation of the Neurotic," Col. Petrie on "Psychopathic Personalities," Dr. Slater on "The Recognition of the Neurotic in the Services," and Dr. Sargant on "Physical Treatment in Psychiatry." A luncheon was held at which the following were present: Mr. Salmon, Clerk of the L.C.C.; Dr. W. Allen Daley, Medical Officer of Health; Prof. Francis Fraser, Director-General of the Emergency Medical Services; Dr. O'Brien of the Rockefeller Foundation; the administrative officer of the Mental Health Services; Mr. R. Sargood, chairman of the Mental Health Services Committee, and other members of that committee. The afternoon was devoted to a demonstration and talk on the electro-encephalogram by Dr. Hill, visits to the occupational workshops and a talk by Dr. Shaw, and a demonstration of electroconvulsive therapy by Dr. Sands. Col. Thompson and Col. Van Nostrand, on behalf of the U.S.A. and Canadian psychiatrists, thanked the Council and medical staff for having given them such a successful and interesting day.

In observing the acute effects of smoking on respiration and circulation, R. J. Main (*Proc. Soc. exp. Biol.*, N.Y., 1941, **48**, 495) came to the conclusion that the smoking of one cigarette "according to a standardized exaggerated technique lowers alveolar CO_2 for from 10 to 30 minutes and increases blood pressure and heart rate for from 30 to 60 minutes in both smokers and relative non-smokers."

Correspondence

The Teaching of Ophthalmology

SIR,—The lamentations over the alleged neglect of ophthalmic values which found expression at the Ophthalmological Congress (*Journal*, July 31, p. 144) may perhaps justify the revival of some earlier proposals. These rest on the claim that a large part of clinical ophthalmology is related to medicine rather than to surgery, and that the corresponding sphere of education is therefore to be found on the medical side of the curriculum. The first introduction to the subject is, or ought to be, provided in the preliminary classes of physics and physiology, where the student learns the optical values of the eyeball and of the ophthalmoscope and the relations of the several parts of the visual field to the corresponding parts of the visual pathway. This foundation knowledge has its opportunity of application in the field of clinical medicine, where the systematic use of the ophthalmoscope, of the perimeter, and of the methods of testing the ocular musculature can be included in the collection of clinical facts, positive and negative, necessary to the establishment of a well-founded diagnostic conclusion.

In principle, this cultivation of medical ophthalmology was urged by no less an authority than the late Sir Clifford Allbutt, who, in his book, *The Use of the Ophthalmoscope*, published in 1871, maintained that "every medical school is bound to teach the use of the ophthalmoscope as carefully as the use of the stethoscope." That careful teaching is effected by the application of the stethoscope in every clinical examination. Obviously the same discipline applies to the ophthalmoscope and is enforced by the ease with which skill in the use of the modern instrument is attained. If the claim is granted it justifies the sanction of an examination test, and if examiners in clinical medicine will apply this test I have found from personal experience that the student world will rise to the occasion.

There remains the need for instruction in the estimation and correction of errors of refraction, in operative methods, and in the recognition and treatment of local diseases of the eyeball and its related parts; and this is the department of ophthalmic surgery. While fully recognizing these local claims and the skill which deals with them, it is none the less true that many pathological conditions of the visual apparatus are parts of a general or remote disease picture, and the contribution which these can make to the values of ophthalmology are to be secured by making the clinical investigation of visual conditions not the property of a special department but rather a natural and necessary part of the art of clinical medicine and general practice.—I am, etc.,

Hove. C. O. HAWTHORNE.

Childhood Infection and Later Pulmonary Tuberculosis

SIR,—I was greatly interested in the account given of the work of the Brompton Hospital Research Department under this title (July 24, p. 98). It is a work of first-class importance, and a form of investigation which has been too long neglected. The only comparable investigation is that on blood by Prof. Davidson in Edinburgh. While an immense amount of literature has been written about definite disease, very little work has been done to determine what is the real normal and how far can the alleged normal vary within the limits of good health.

In 1929 I published an article in the *B.M.J.* under the title: "Hilus Tuberculosis as an Important Causative Factor in Pulmonary Tuberculosis in Adults." The titles of the two papers have a close similarity, and although the conclusions arrived at do not exactly correspond to mine, they go much further in that direction than any I have seen so far. My conclusions were:

"(1) Hilus tuberculosis can be demonstrated clinically in a relatively large percentage of children. (2) In spite of much clinical evidence suggesting pulmonary tuberculosis in children actual invasion of the lung parenchyma is relatively rare. . . . (4) Pressure from enlarged bronchial glands can be demonstrated clinically; it has the effect either of restricting the free flow of air into a lung or of interfering with the free circulation of the blood in the lungs, and

giving rise to localized areas of oedema, rarely to general pulmonary oedema. (5) Rupture of adherent caseous glands into a bronchial tube is a not uncommon cause of pulmonary tuberculosis.

"The diminished death rate from pulmonary tuberculosis is probably due mainly to the lessened risk of infection from 'open cases' in the homes and to the more prompt recognition of early cases. It is unlikely that a further appreciable decrease will occur unless a serious attempt is made to deal with the large number of potential cases *before*, not *after*, the lung parenchyma has been invaded by the dreaded tubercle bacilli."

These conclusions were arrived at as the result of a clinical research extending over a period of ten years and involved the examination and re-examination of 20,000 children. The facilities at my disposal were very limited compared with those available to the Brompton Hospital Research Department, but the conclusions arrived at are approximately similar to mine. For example, the article states: "Certain immediate and later complications may, however, arise, as a rule secondarily to the involvement of lymphatic glands in the primary complex." According to Parrot's law, "there is in the child, whose organs are immature and considerably better adapted for such investigations than an adult's, no affection of the lungs which would not be also present in the adjoining lymphatic glands; and, vice versa, there would be no change in the tracheo-bronchial lymphatic glands without analogous ones in the lung."

The exhaustive work of Ghon has proved that an initial primary lesion is common in children, and also that this lesion almost invariably heals but the bronchial glands are always involved. Here, in my view, lies the potential danger of a recrudescence in adult life. It is too often assumed that the "flare up" in later life is due to the lighting up of an old lesion, whereas it is more likely to be due to the softening and breaking down of an infected bronchial gland, which was adherent to the adjoining pleura in the situation of the newly discovered lesion or emptied itself into a bronchus. I could quote several cases in support of this claim, but space forbids.

How often do we find that a definite pulmonary lesion was preceded by influenza or a bad cold? The fresh infection breaks down the already diseased glands, with the sequence already suggested. I found that evidence of tuberculous infection was more frequently found in those suffering from some septic condition of the mouth—decayed teeth, infected tonsils, etc.—and especially in those suffering from defective nutrition. The bronchial glands form the most important barrier against all infections, but in mass infection, particularly when of a virulent character, they fail in their task.

There is, I am afraid, too much complacency about the way we are tackling the problem of pulmonary tuberculosis, and I find no reason to alter the conclusions arrived at fifteen years ago. It is now established that a certain percentage of *pulmonary* lesions are due to the bovine rather than to the human tubercle bacillus; hence the great need for teaching the public how to sterilize the milk consumed. Milk heated to 70° C. is sufficient, but overboiling does not affect the nutritive value: the vitamins are easily replaceable, as the rearing of babies on boiled milk can readily testify. Here is another field for investigation to counter the opinions of eminent medical men who have no practical experience but who do harm because the public attach as much importance to their intuitive opinions as they do themselves.—I am, etc.,

Birkenhead. D. J. GAIR JOHNSTON.

H 11 for Cancer

SIR,—I should like to report an apparently very successful clinical result of treatment by H 11 for carcinoma:

Male aged 54. He first noticed clinical signs in February, 1940. In February, 1941, treatment by diathermy was given for a large carcinoma of the bladder by Mr. H. O. Robinson. *X*-ray therapy was given to the residue in the bladder by Mr. Anthony Green in April, 1941. The local growth has remained well from then on. He developed spinal metastases, cervical and lumbar, *x*-rays taken in September and November, 1941, by Dr. Chesterfield Cooke showing typical changes over an extensive area. For these bony metastases he received *x*-ray treatment again by Mr. Green in September and November, 1941, and pain was relieved. The erythrocyte sedimentation rate and plasma phosphates were elevated. He then developed a large liver on which there were palpable nodules, jaundice, retching, and ascites, his weight falling to 7 st. He was seen by Mr. H. O. Robinson and Mr. Anthony Green, both of whom diagnosed secondary deposits in the liver and did not advise *x*-ray treatment. A course of H 11 extract was started on Jan. 21, 1942, because both surgery and radiotherapy offered no hope whatever. In a month the retching and jaundice had gone, diet began to be normal, and in seven weeks there was no ascites, and weight was over 7½ st. The liver gradually diminished in size and nodules became impalpable. In nine weeks the patient began walking unaided; after eighteen weeks he was able to walk a quarter of a mile. Twenty-six weeks after commencing treatment he was back at his office, clinically in good health, and with no certain evidence of active growth. He is still well after a year's work, putting in 5½ long days each week. At the end of treatment he weighed over 9 st. and now weighs about 10 st.

Mr. Anthony Green tells me that he has treated a few further patients without success, but feels that the method might be tested at a research centre because one successful case may be due to the injection of foreign material and does not prove specific action.

When a patient is suffering from cancer and both a surgeon and a radiotherapist can offer no hope whatever, I should like to be advised of a better method of treatment that offers any chance of recovery.—I am, etc.,

Redhill, Surrey. FREDERICK CURTIS.

SIR,—The publication of H 11 therapy and experimental investigations of it in the *Journal* of July 17 are suggestive of premature conclusions on the part of Gye, Ludford, and Barlow, who have failed to corroborate the Hosa Research Laboratory workers' much more extensive observations, and also suggest a similar biased criticism in the comments of the leading article on the same subject, for one cannot agree that an extension of 12 to 18 months of improved health with recession of malignant growth and absence of secondaries in inoperable and hopeless cases of cancer, as shown by Kidd in 42% of his patients, can be considered other than a very satisfactory and desirable clinical result. The leader also infers that the Hosa Research Group is a business undertaking, but is this also not a mistake? Inquiries have led me to believe that the Hosa Research Laboratories are a philanthropic establishment operating as a registered charitable trust, and therefore, surely, its workers are on similar lines from this point of view to those of the Imperial Cancer Research Fund workers.

As your leading article says, many practitioners throughout the country are using H 11 therapy, with what may broadly be said to be 50% of satisfactory clinical results in inoperable cases of cancer, and it is to be hoped that what almost appears to be an attempt to sabotage the most useful adjuvant medical treatment at present available in inoperable cancer cases will not deter practitioners from employing H 11 therapy under controlled conditions until the Imperial Cancer Research Fund organization, or some other progressive body, provides the profession with a better therapeutic help.

While fully agreeing with the remarks that it is the doctor's "bounden duty to exercise the utmost scientific caution" and to avoid the raising of false hopes, yet we might also remember the statement of a very ancient and profound philosopher, who said that when everything else had failed there still remained faith, hope, and charity, and the greatest of these is charity; and perhaps, in the new world we all look forward to, charity may find a new place in the relationship of even scientific research workers.—I am, etc.,

Southport. E. CRONIN LOWE.

SIR,—I was very interested to read the reports of H 11 published in the *Journal* of July 17. I had been impressed by the experimental results shown by Mr. Thompson on the inhibition of carcinomatous growths in mice and decided to try the preparation in the treatment of cases which were frankly inoperable.

Early in 1940 we commenced using the preparation; it was known then as G.R.H., and this was used until H 11 was evolved, and one or two modifications of this were thereafter used throughout the treatment of the cases. The cases were selected because of their inoperability or their resistance to radium therapy.

While the series of cases treated here was smaller and the treatment might not have been as intensive or as prolonged as in those cases mentioned by Kidd, in many the treatment

was prolonged to the limit of the patient's tolerance. The majority of the patients very quickly became intolerant of the injections which were carried out twice daily, and as it was considered that the substance was excreted very rapidly trials were made with a repository dose which proved ineffective. The substance was administered here both intramuscularly and intravenously without any apparent difference in its effect. In none of the cases was life prolonged nor did the growth seem to be in any way inhibited.

Tumours which had extended to the surface of the skin, and whose superficial limits were therefore measurable, were selected in at least two instances for this treatment, but again no sign of any attempt at healing or restriction of the extent of the growth was evident. Every one of the patients submitted to this treatment at this hospital died, and I came to the conclusion that, however effective the substance was in the control of the transplant growth in mice, it had no effect clinically. The treatment was therefore discontinued.—I am, etc.,

W. ARKLAY STEEL, M.D., F.R.C.P.,
Medical Director, Hillingdon County Hospital.

Uxbridge, Middlesex.

Diabetic Retinitis

SIR,—Dr. George Graham, in his letter concerning diabetes (July 24, p. 115), remarks that he has "watched the retinitis improve when the diabetic condition has been brought under control." I should be interested to learn whether any of your other readers has had the same happy experience. Among all the cases I have seen of defective vision due to diabetic retinitis, none has ever shown any appreciable restoration, however soon the diabetic condition was brought under control by diet and other measures. Lest my own experience should have been in this respect unusually gloomy, I put the question to half a dozen ophthalmological colleagues, none of whom could ever remember having seen visual improvement in a case whose defective vision was attributable to diabetic retinitis.

I do not for a moment question the validity of Dr. Graham's observations. I only suggest that appreciable improvement in diabetic retinitis must be extremely rare compared with the opposite condition of steadily deteriorating vision from diabetic retinitis that goes on increasing in spite of all known devices for adjusting the victim's disordered metabolism.—I am, etc.,

J. H. DOGGART.

London, W.1.

Globin Insulin

SIR,—The conclusion Dr. R. D. Lawrence records (July 24, p. 103) that the action of globin insulin with zinc is not materially different from that of protamine-zinc-insulin is, as he admits, not in agreement with the opinion of the American workers with this preparation. It may therefore be of interest to your readers to know that laboratory evidence on many hundreds of rabbits agrees with the American workers' view and not with that of Dr. Lawrence. In the Tuckahoe (U.S.A.) laboratories of the Wellcome Foundation work has been in progress for 6 or 7 years, and Mr. R. Thorp, working in the Wellcome Laboratories at Beckenham, amply confirmed the claims of his American colleagues. The table gives his results on 18 groups of 12 rabbits. The blood sugars are given as a percentage of the initial blood sugar.

Hours after Injection:	2	4	6	8	10	12
Blood sugar:						
G.Z.I.	53·4	61·1	73·0	79·9	86·5	90·9
P.Z.I.	61·2	62·6	64·5	67·7	74·3	79·2

At the 2nd hour globin insulin gives a lower blood sugar than protamine insulin (P=ca 0.049). At the 4th hour they are indistinguishable. At the 6th, 8th, 10th, and 12th hours protamine insulin gives a lower blood sugar than globin insulin (P=ca 0.022, 0.001, 0.03, 0.06 respectively). Unmodified insulin in similar doses would have practically completed its action by the 6th hour. I am therefore encouraged to believe that the American clinicians' conclusions are more likely to be correct in this case than those of Dr. Lawrence. Nor am I shaken in this belief by his reported experiments. His patient's reaction to any insulin is, I should judge, abnormal, for 32 units of soluble insulin produced very little effect up to the 4th hour, although carbohydrate had been excluded from the diet, and the maximum fall was at the 10th hour. It is not surprising, therefore, that in this patient the average maximum depression for globin insulin is at the 15th hour and for protamine insulin at the 18th. There is, in addition, corroboration of the striking American observation that globin insulin unit for unit produces more total effect than protamine insulin. The average blood sugar for the four days of observation with globin insulin falls from 268 to 239 in 4 hours, to 212 in 6 hours, and finally to 198 in 15 hours, after which it rises slowly. In 34 hours (3 observations) the blood sugar was back to 224. Protamine insulin produced in this patient no significant fall till the 15th hour, the blood sugar being at its minimum (180) at the 18th hour, but recovered to 215 in 24 hours. This analysis, of course, from a statistical point of view, is no more adequate than Dr. Lawrence's own deductions from the case; it does emphasize the uncertainty of drawing deductions from such a small body of evidence. I have no doubt, however, that Dr. Lawrence would agree with the last conclusion. But he makes certain observations not connected with the physiological action of globin insulin on which I should like to comment.

1. He states that a new delay insulin should not be introduced without withdrawing the old. There are already two delay insulins on the British market, Hagedorn's original form of protamine insulin without zinc having been issued again by English manufacturers at the urgent request of responsible clinicians when Danish insulin disappeared in 1940. I would suggest that the variability in response of different patients to different kinds of insulin is a good reason for providing a further tool for trial in the difficult case.

2. He says that it will be necessary to administer soluble insulin with it. That is not the experience of the American observers, and he admits that its onset of action is more rapid than that of protamine insulin. Dr. Lawrence's remarks on the subject of excess protamine in protamine insulin with zinc are based in part on a misconception. He speaks as though any excess of protamine in protamine insulin will absorb completely any soluble insulin mixed with it. That is not so, for the affinity of protamine for insulin is comparatively low, and the compound of protamine and insulin obeys the mass law, so that the product of the protamine concentration and the insulin concentration is a constant—the solubility constant of protamine insulinate—so that no matter how much excess protamine is present added soluble will remain, in part, in solution. Large excess of protamine will only increase the quantity of insulin necessary to produce the amount of soluble insulin required, and since the mixture has to be titrated on each individual patient small variations such as do occur in protamine content are of little importance. In any case, the amount of protamine is determined by regulations under the Therapeutic Substances Act, and it is useless to blame the manufacturers for the deficiency, if any, of these regulations. All that the manufacturers can do is to ensure so far as possible that the protamine insulin made by each of them is, within the limits of the testing procedure laid down, as nearly as possible identical in quality and quantity of protamine. To this end extensive experiments are being carried out in collaboration by the three manufacturers concerned at the present time. It is difficult to say what are the exact chemical equivalent weights of globin and insulin. But since a small reduction in the proportion of globin to insulin leads to a considerable reduction in the prolongation of action, Dr. Lawrence is sure to find if he adds soluble insulin to globin insulin that the added insulin will have its desired effect in the early stages, provided he makes sufficiently extensive observations to eliminate the gross variability of the patients.

3. He objects that the solution is clear on the ground that it will be confused with soluble insulin. There will be a label on the bottle in distinctive bright colours which ought to prevent any responsible person mistaking it for any other kind of insulin. I think it is questionable whether the rate of therapeutic progress should be scaled down to suit the capacity of the untrained assistant. The clear solution has positive advantages. It can be filtered after the mixture is made, which is a manufacturing point of some moment in connexion with the freedom from contamination with organism. Its acid reaction makes it less easy to contaminate in use; in this connexion it has been reported that cases which were "sensi-

ive" to protamine insulin could take globin insulin without reactions. It is not improbable that the reactions were due to careless technique on the part of the patient leading to minor infections of the protamine insulin which were controlled by the more acid reaction of the globin insulin.

It may also be pointed out that there is a practically inexhaustible source of supply of globin in this country which may yet be of importance in wartime, and globin is more likely to be of constant composition than protamine, which is not always derived from the same species.

Nine months ago I started my attempts to get clinical trials carried out on this product in this country. No adequate series of clinical experiments is yet in sight. That is not the fault of British clinicians. Present conditions of dispersal of facilities are responsible. My view is that the American evidence is sufficient ground for no longer delaying to make globin insulin available to the British diabetic. It will in time automatically find its proper place in therapeutics.—I am, etc.,

Wellcome Physiological Research Laboratories, Beckenham. J. TREVAN.

Orthopaedics of "Sentry Go"

SIR,—Evidence of recent date has been adduced upon the potential dangers that may afflict the marching foot of the soldier. Even fracture of a metatarsal bone may occur. Hence any suggestion that can be made with a view to preventing those dangers would be of value, provided it was valid and reasonable. No man with an orthopaedic eye, looking at the march of the sentries outside Buckingham Palace, for example, could fail to notice the possibility of trouble in the methods adopted by those sentries. At the "about turn" each leg is semiflexed at the hip, the knee is semiflexed, and the movement is ended by the severe stamping of the foot on the ground before the "about turn" is completed. This stamping action is a potential danger to the feet; it would aggravate any tendency to varicose veins, if it would not actually induce them, and the jar would be conducted to the head by the spinal column. I would not be surprised to learn that men recently relieved from sentry duty complained of headache in consequence. It is to be hoped that this fantastic and rather ridiculous performance will be stopped.—I am, etc.,

Stanmore. G. LENTHAL CHEATLE.

Selective Action of Vitamin C on the Suprarenals?

SIR,—It has been established that iodine is necessary in the diet for normal thyroid function. It has also been shown that the normal thyroid contains about 15 mg. of iodine—almost all the iodine contained in the body—and, moreover, that the iodine content of the gland can be increased by the administration of iodides.

It seems possible, then, that other endocrines may be affected in a similar manner. For instance, vitamin E appears to have a selective action on the gonads, causing descent of the testes and activity in the ovaries; for this reason it is used in cases of sterility. Vitamin D causes a rise in blood calcium and phosphorus whose metabolism is controlled by the parathyroids. It is therefore probable that the function of the endocrines is dependent on the presence in the blood of certain vitamins or chemical substances, and that these substances have a selective action on a particular endocrine.

Investigating further we find that the only vitamin in any large amount in the human body is vitamin C or ascorbic acid; furthermore it is found in the suprarenals in the greatest quantity. This must have some significance, and I suggest that ascorbic acid may be the chemical substance necessary for normal suprarenal function. If this is the case the ingestion of a suitable amount of ascorbic acid should increase the activity of the suprarenals.

With this idea in mind I took 500 mg. of ascorbic acid on two successive days—a total of 1,000 mg. On the third morning I woke early with boundless energy and a feeling of well-being. The pulse rate was increased and the skin warm and moist, similar effects to stimulation of the sympathetic. All these signs are also present in hyperthyroidism, but the fact that ascorbic acid is found practically only in the suprarenals suggests that it has a selective action on that gland, and that increasing the intake of the vitamin increases the amount in the glands, thus increasing their activity.

Some of the suprarenal functions are: (1) production of adrenaline; (2) control of blood pressure; (3) regulation of blood distribution; (4) control of ionic distribution, particularly sodium and potassium; (5) control of liver glycogen; and (6) possible detoxifying centre for bacteria. It will be seen that the circulation, and therefore the nutrition of every cell in the body, is dependent on proper suprarenal function. If, therefore, ascorbic acid is necessary for normal suprarenal function—and its presence in the gland in such large amount suggests this—it follows that vitamin C is the most vitally important of all the chemical substances in the diet. It cannot be due to chance that vitamin C is found so widely in Nature in fruit, vegetables, and milk.—I am, etc.,

Preston. W. H. DERHAM.

Psychiatric Treatment in General Hospitals

SIR,—I should like to reply to correspondents whose comments lie within the scope of my article under this heading, leaving out other dimly connected and debatable issues raised. I endeavoured to avoid any but the obvious deductions in the commentary, since I intended the paper to be a report on a "social experiment" (see subtitle) in psychiatric medicine, using methods employed not only in Sutton psychiatric units but by clinicians in numerous mental hospitals. It has been suggested that I have tried to relegate mental hospitals to their former custodial role (Drs. T. P. Rees and W. H. Shepley, June 12, p. 735), as in the concluding part of the paper I left the question, "To what extent can mental hospital services, at present largely organized to meet the maintenance needs of an abundance of chronic patients, be adjusted to secure the confidence of the early recoverable patients, so that this confidence would lead to their early treatment and lessen the incidence of chronicity? . . ."

Some of the reactions expressed demand further emphasis on the fact that the patients discussed are a selected group, mostly selected by other psychiatrists of this hospital who are themselves using a comprehensive scheme of treatment, including psychotherapy, insulin comas, modified insulin therapy, continuous sleep, electrically induced fits, etc., and combinations of the foregoing, according to the requirements of the individual patient. A decline in results was noticed where patients were selected for treatment by psychiatrists without personal experience in the comprehensive application of these methods, even though such psychiatrists undoubtedly had long experience in other directions. It follows that general hospital in-patient psychiatry does not consist of the mere allocation of a ward with a psychiatrist in charge; the latter should be trained in the correct selection and treatment of patients if results are to be worth while and risks minimized. In treatment this applies equally to nursing staff.

There has been no attempt to tackle all and sundry psychiatric states in our unit, and the unfortunate "general hospital versus mental hospital" phrase of Dr. Spencer (July 10, p. 54) therefore does not arise. Only by difference in type can one explain the fact that with essentially similar forms of treatment (Drs. Rees and Shepley) 35 beds in Sutton psychiatric ward admitted and discharged in a year *more patients* than the whole of Warlingham Park Mental Hospital, with 849 beds, admitted in the same period, and any psychiatrist who has been fortunate enough to be shown round Warlingham would admit that it must be one of our most progressive mental hospitals. There is therefore little justification in the argument expressed by some correspondents and considered, as I know, by other psychiatrists, that by the use of general hospital neuropsychiatric wards the mental hospitals are likely as a general rule to receive fewer recoverable admissions.

Having had the privilege of working in four general and four mental hospitals since qualification I know that generally speaking the type of patient treated at Sutton is unfortunately rarely seen in a mental hospital, and his care has too often devolved on the G.P. If this same type did reach a mental hospital, it was usually when chronic or when an acute flare-up of his condition made such a course imperative. Dr. Crichton-Miller (June 26, p. 800) says that there are selected psychiatric patients best treated without the local supervision required by other types, and at Sutton this is being done.

As regards "stigma," whatever the "actual knowledge" of some correspondents may be in this respect concerning its

growth about the "mental ward," I can only report that after two years we are as little troubled by this difficulty as after the first three months. Perhaps our critics are thinking of observation wards, and it may be that we shall have to wait longer before considering ourselves clear of "stigma" possibilities.

Lastly, I feel that whatever influence these matters have on ourselves as doctors there is no doubt that for patients of *selected types* it brings specialist psychiatric treatment to a frequently recoverable class who, as the figures quoted above show, do not as a general rule use the facilities mental hospitals provide.—I am, etc.,

Sutton, Surrey. D. E. SANDS.

SIR,—I do not wish to take up much of your valuable space in replying to the critics of my letter (June 26, p. 800) on this subject. To my mind there is a place for the treatment of psychiatric cases in mental hospitals, psychiatric clinics, and special wards of general hospitals, and it seems a pity to me that at the present time in planning for post-war medicine psychiatrists cannot agree among themselves. There is a section of psychiatrists who do not seem to realize that they will be part of a comprehensive service where the man working in the mental hospital will also take his place in the out-patient clinic and general hospital, while the man working in the latter will also do his share of work in the mental hospital. Team work and continuity of treatment are of more importance in psychiatry than in any other branch of medicine, and the successful treatment of the patient is surely the most important point in connexion with this controversial subject.—I am, etc.,

Emergency Hospital, Sutton. LOUIS MINSKI.

SIR,—For years the psychiatrists have been telling us, as do Drs. Rees and Shepley (July 24, p. 118), that stigma attaches to mental illness only because general opinion remains unenlightened.

Would these psychiatrists themselves employ as assistants or welcome as sons-in-law persons who had been inmates of mental hospitals? Would they view the development of schizophrenia in their daughters with as little distress as a fractured femur or a ruptured ectopic?

Whatever they tell us, stigma will always attach to mental illness and defect in civilized communities, where success in the struggle for existence depends on mental rather than on physical perfection.—I am, etc.,

G. L. ALEXANDER,
Colonial Medical Service, Gold Coast.

The Cult of Negative Health

SIR,—Two different but related problems are being discussed under the above heading. These are, first, the problem of the desirability of civilization and its amenities, and, secondly, that of the needs of the individual if he is to secure complete health. The confusion between these has once again brought up the old fallacy, voiced by many throughout history, that civilization is bad for man. This belief goes hand in hand with the concept of the "noble savage." An impartial view would, I think, decide that in our civilization the majority live a fuller, longer, and, on the whole, healthier life than they would do under more primitive conditions.

The second problem arises because, despite the benefits of civilization, many people are unhappy, frustrated, hypochondriacal, and mentally ill; but before deciding that the amenities of civilization are the causes of these troubles it would be well to examine the problem more fully. Dr. R. E. Lucas surely gets to the root of the matter when she says that all the "interests and abilities" of the individual must be fully occupied if he is to obtain complete mental and physical health. This fact is brought out again and again by physiological, psychological, neurological, and sociological studies. There are so many references that I shall mention only one—*Human Behaviour* (Goldstein). In brief, we may say that the individual requires to feel himself to be a useful and essential member of the community, with his abilities and interests fully used in his work and leisure. The importance of the first factor was illustrated by the decrease in the so-called minor mental and bodily illnesses which occurred on the outbreak of war and during the "blitz," instead of the expected increase.

The second factor will require tremendous organization and progress before it can be applied universally, but we must all strive towards it. Meanwhile little will be gained by blindly removing and prohibiting modern amenities. Thus one woman may fulfil herself in having a baby every year, while another may be crippled and prevented from living a full life by having even one child. These are obviously extreme examples, but the revival of individual medicine must be applied to the whole of life if everyone is to make the most of his life.—I am, etc.,

Harrogate. JAMES CAMPBELL.

Sulphonamide Therapy in Tuberculous Empyema

SIR,—In connexion with the article on tuberculous empyema (June 26, p. 792) details of this case may be of interest.

An adult male who had been undergoing pneumothorax treatment for pulmonary tuberculosis at St. Brigid's Sanatorium, County Laoighis, since September, 1941, developed fluid in February, 1942. This recurred, despite aspiration and air replacement, on three occasions, and in July, 1942, was thickly purulent. On this occasion, after removal of 12 oz., 20 c.cm. soluseptasine was instilled into the pleural cavity. This pus showed no organisms on direct smear, but culture on Lowenstein's medium resulted in a profuse growth of tubercle bacilli. In August, 1942, 5 oz. of pus, which was, however, much thinner than on the last occasion, was removed and replaced by 10 c.cm. of soluseptasine, since when the pus has not recurred, and the pneumothorax treatment has since continued without further complications.

This is the only case of tuberculous empyema I have had the opportunity of treating in this manner, but three years ago a case of pneumococcal empyema, in which pus had recurred despite aspiration on three occasions and intensive oral and intravenous sulphonamide therapy, completely subsided after the removal of 10 oz. of pus followed by the injection of 20 c.cm. of soluseptasine intrapleurally.—I am, etc.,

Co. Laoighis. M. CROWE.

Bovine Tuberculosis in South Africa

SIR,—Dr. Basil F. Sampson's letter (June 5, p. 708) states: "Moreover, surgeons will tell you that the typical non-pulmonary lesions of the disease in humans are not commonly seen by them." If Dr. Sampson will visit this hospital I can show him 75 cases of surgical tuberculosis (mostly tuberculosis of the vertebrae), which is the maximum number of cases for which I have accommodation. He can see a list of names of people, several of whom have been waiting more than two years for admission. In the surrounding districts are many patients with surgical tuberculosis who do not come for treatment because it is widely known that we cannot admit more because of lack of beds. I would go so far as to state that one of the commonest surgical conditions in this area, among Africans, is surgical tuberculosis, due, in my opinion, to widespread malnutrition.—I am, etc.,

Victoria Hospital, Movedale, Cape Province. W. C. J. COOPER, F.R.C.S.ED.

Nurses' Pay and Hours

SIR,—The shortage of nurses was acute even before the war, and there were many complaints that the best type of girl was not coming forward. It was reiterated that improvement would only come when conditions of working, feeding, discipline, and salary were much more reasonable. Several committees have deliberated over the question of salary, and have recommended what they regard as munificent increases. But they are totally inadequate. It is now up to doctors to help the nurses; or are we too busy fighting our own battle?

Under the new recommendations student nurses will receive about £40 the first year. This is less than our parlourmaids receive. Yet the nurses work hours as long and hard as any manual labourer, and often most unpleasant. It is said that their training is part of their salary, but this is a double benefit for the hospital cannot run without senior trained nurses. Moreover, they study and often have to attend lectures in the three hours of free time they are allowed daily.

The position of the trained nurse is equally ridiculous. A staff nurse, State-registered, after completing three or four years' training and passing her examination, is to receive £10

to £120 a year. At present State-registered Civil Nursing Reserve nurses paid by the Ministry of Health receive £105 a year, plus £65 living-out allowance. This works out at 65s. 6d. a week, whereas the L.P.T.B. are advertising for untrained women to become Underground Railway porters at a salary of 67s. 6d. a week.

Finally, may I point out that the 48-hour week still leaves a long working day, if a day and a half are taken off each week, identical with the old working day, since time taken off for meals is now added to the working hours.—I am, etc.,

London, W.6. C. W. F. MCKEAN, M.B.

Obituary

SIR BECKWITH WHITEHOUSE, M.S., F.R.C.S., F.R.C.O.G., F.A.C.S. (Hon.)

President of the British Medical Association

The sudden death of Sir Beckwith Whitehouse, which took place while he was returning home after the meeting of the Council of the British Medical Association on July 28, was briefly recorded in our last issue. Sir Beckwith appeared to be in his usual health at the meeting, and the last remark he made was a graceful acknowledgment of the action of the Council in nominating him for a second year as President of the Association. He confessed that hitherto his presidential duties had been of the lightest, but he added that if the war situation developed as favourably as some optimists predicted the duties might more closely approach to those of a peace-time President, even though the usual Annual Meeting in his own city was still out of the question.

[*Lafayette, Ltd.*

Harold Beckwith Whitehouse, who was in his sixty-first year, was a man of the Midlands. He was born at Ocker Hill, Tipton, one of the "iron towns" of Staffordshire, only nine miles from Birmingham, in which city he spent the whole of his professional career. He went to school at Malvern College, and later took his medical training in London, at St. Thomas's, where he was entrance science scholar in 1901 and William Tite scholar in 1902. He graduated M.B., B.S.Lond. in 1906, gaining in that year the Sutton Sams memorial prize for work in obstetric medicine and diseases of women, thus early declaring his bent. In 1908 he took the M.S. of London University, with honours, and qualified for the gold medal in surgery, and in the same year he became Fellow of the Royal College of Surgeons.

In Birmingham he quietly built up a solid reputation as an obstetrician and gynaecologist. His teaching and expository gifts were also quickly recognized. In 1920 he was Ingleby Lecturer at the University—a lectureship named after an early professor of midwifery at Queen's College and intended for the promotion of obstetric medicine and surgery. In 1924 he was appointed Professor of Midwifery and Diseases of Women, succeeding Thomas Wilson, who had held the chair since 1912. Whitehouse was the third occupant of the combined chair. Before 1910 there was at Birmingham a professor of midwifery and a professor of gynaecology, the first to hold the professorship of gynaecology being Lawson Tait. For nearly twenty years in his academic position Beckwith Whitehouse exercised a marked influence upon gynaecological opinion and practice. He was generally recognized as a careful and most illuminating clinical teacher, and united with this was his skill as an operating surgeon. In all that he did he took the most scrupulous care over detail. He was himself the originator of some surgical procedures, and among his inventions was a caecal retractor for appendectomy, whereby the appendix and a portion of the caecum was isolated from the peritoneal cavity and the edges of the wound. He was also an eager research worker. The subjects within his specialty in which he took the keenest interest were uterine haemorrhage, its pathology and treatment—which was the theme of his Hunterian Lectures at the Royal College of Surgeons, delivered when he was little more than thirty years of age—and the innervation of the uterus.

Between the medical school, his several hospitals, and his private consulting room Beckwith Whitehouse lived busy days—and often nights—and no doubt the work took its toll. He was honorary gynaecological surgeon to the Birmingham United Hospitals (the General Hospital in Steelhouse Lane and the new Queen Elizabeth Hospital out at Edgbaston), and honorary surgeon to the Maternity Hospital in Loveday Street. In addition he was consultant to a large number of hospitals in the surrounding area—the Lucy Baldwin Maternity Hospital, Hammerwich and Sutton Cottage Hospitals, the Smallwood Hospital, Redditch, the Guest Hospital, Dudley, Walsall and Nuneaton General Hospitals—and to the Worcestershire County Council. The demands of all this work, not only upon his time and skill but upon his sympathy, must have been enormous. He once said that as a gynaecologist he heard an undue proportion of people's domestic worries. Certainly no man could practise this branch of the profession for thirty years, especially in a great industrial area in those Midlands which, according to Belloc, are "sodden and unkind," without being a humanitarian as well as a great physician and surgeon. Lady Baldwin consulted him fifteen years ago as to the usefulness of a maternity hospital for her countryside, and received his characteristically enthusiastic reply, "If you get your hospital going I will come night or day to lend a hand when needed." And, Lady Baldwin has added, "He kept his word, coming over twenty miles, often in the dark, to help save a mother and her baby; he never ceased his interest nor grudged the time spent in this work. He saved many a woman, not only at the time of childbirth but also from the suffering incidental to their sex."

His experience as a consultant also filled him with a great admiration for the family doctors, whom he saw carrying on their work under the shadow of the rolling mills and in the light of the furnaces. His appreciation of these men made him apprehensive of tendencies which seemed to him to threaten the survival of family practice and to portend some system of State medicine. An uncompromising individualist, his individualism was the result of his experience and observation of medical practice carried out often under the hardest and most testing conditions. The things which he saw and felt he could express with clearness and force in such a way as to win the respect even of those who disagreed with his conclusions.

Outside Birmingham he found further scope for his energies. At different times he was examiner in midwifery to the Royal College of Surgeons, the Universities of Sheffield, of Bristol, and of Leeds, and under the Central Midwives Board. For four years he served as a member of the Radium Commission. No one appreciated more the value of radium in the hands of the gynaecologist, but he was well aware of the risks and dangers of its injudicious use, and set these out with his usual care in what he wrote on the subject. In 1929, when the British (now the Royal) College of Obstetricians and Gynaecologists was incorporated, he became a Foundation Fellow, and served as a valued member of its council until 1937. In the early days of that College it owed not a little to his enthusiasm and common sense. Until he became President-Elect of the British Medical Association his voice was not often heard in London, but he was vice-president of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, and a Fellow of the Medical Society of London, and he had been president of the Midland Obstetrical and Gynaecological Society. In 1933 he visited the United States at the invitation of the American College of Surgeons, and was made an Honorary Fellow of that body; he was also made an Honorary Member of the Canadian Medical Association, to which he gave an address on the menopause. He enriched his experience by frequent visits to Continental clinics and operating theatres, and his own writings and research made him well known beyond the borders of this country.

His contributions to the literature of midwifery and gynaecology were mostly in the form of papers in the medical journals, but one noteworthy literary task was his editorship of the fourth edition of Eden and Lockyer's *Gynaecology*, published in 1935. The earlier editions of that standard work were revised by the original authors, but on relinquishing their task they asked Beckwith Whitehouse to accept the responsibilities of editorship. The advances in both the science and the art of gynaecology which had been made during the eight years since the appearance of the third edition made it necessary to rewrite various sections, to add a great deal of new matter, and to rearrange the order in which some of the original matter was presented. One innovation was the inclusion of a discussion of the medical aspects of contraception so far as this was believed to be necessary for the requirements of medical practice, and without entering into the ethical questions involved. It was the new editor's feeling that the inclusion of this subject in a standard gynaecological textbook would be welcomed, and that it would have the advantage of placing the matter in its proper perspective.

Beckwith Whitehouse's career, otherwise devoted to midwifery and gynaecology, was interrupted by service in the first world war. Within a fortnight of the declaration of war in August, 1914, he was in France, where he served as officer-in-charge of the surgical division and surgical specialist to the No. 8 General Hospital, Rouen, and the No. 56 General Hospital, Etaples.

In the central work of the British Medical Association, which he joined soon after qualification, he took no large part, though he was for some years a member of the Consultants and Specialists Group Committee. But his counsel was for many years highly valued in the Birmingham Branch, of which he became president in 1934. It was intended that the Annual Meeting of the Association should be held at Birmingham in 1940, and Beckwith Whitehouse was the choice of his fellows in the locality for nomination as President. Although, by reason of the war, no meeting at Birmingham could take place, he succeeded Dr. Thomas Fraser of Aberdeen as President in 1942, and was nominated for office for a second year. It was the great regret of his colleagues that the war prevented Birmingham from showing what it could do in the way of entertainment and pageantry, and the President from proving his qualities as host. When the B.M.A. last met in Birmingham, in 1911, he held office as secretary of the Section of Obstetrics and Gynaecology, and in 1928 he was vice-president, and in 1936 president, of the same Section.

The inclusion of his name in the list of Coronation honours in 1937 was very welcome to a large circle of friends in the Midlands and far beyond. Beckwith Whitehouse was a very likeable man, a man of broad outlook and gentle tastes. At his home at Edgbaston he indulged, as much as his busy professional life allowed, his love of gardening and botany, entomology, and music. He married in 1909 Miss Madge Rae Griffith, a Birmingham lady, and had two sons and one daughter. Much sympathy is felt for Lady Whitehouse and her family in their sudden bereavement, and with the Birmingham school in the premature loss of one from whom several more years of distinguished service both in the academic and in the clinical fields might have been expected.

Prof. SEYMOUR BARLING, F.R.C.S., sends the following personal tribute: The death of Beckwith Whitehouse leaves a gap in many circles in Birmingham and the Midlands; his vigorous and dynamic personality touched life at so many points in public and professional life, all of which he enriched by his enthusiasm and capacity for hard work. His appointment as assistant gynaecological surgeon to the General Hospital in 1908 gave him his first opportunity, and this appointment in the city which had known the brilliance of Lawson Tait served as his inspiration throughout life. He was well fitted to carry forward the development of his specialty, in which formerly manipulative dexterity alone was the hall-mark of distinction, for at this time the fundamental part played by the hormones in the sex cycle and the discovery of radium called for new aptitudes which his scientific training and outlook were quick to seize and develop in the service of his craft. So it was throughout his life: his restless mind was always seeking new ways and new ideas to incorporate into his work and carry it forward.

Beckwith Whitehouse found the ordinary social contacts of life difficult, and concealed a natural shyness of disposition beneath a somewhat abrupt manner which made it difficult for his contemporaries, even colleagues whom he knew well, to get beneath the surface. It was quite otherwise with those who as students and residents looked to him for leadership, and some of his happiest moments were associated with his annual gathering of old resident officers, which, growing in size as the years passed, grew into an informal club. As professor he was clear and explicit in his formal lectures, but was happier in clinical teaching in wards and theatre and happiest of all in the daily contacts of hospital work with dressers and residents. In the club he saw those he had moulded and taught by daily intimate contact, and they found in him a friendly and inspiring leader. He was devoted to his patients and they to him, and a busy practice claimed him unremittingly. In spite of this he found time for many activities. For several years he served on the Radium Commission, on which his professional knowledge and scientific training were valuable to advise in the control of a remedy which for a time was threatening to become a danger. His election as President of the British Medical Association in July, 1939, gave him great pleasure and pride, and the knowledge that he had behind him the whole-hearted support of the local profession sustained him in supporting a position which necessarily would add much to an overfull life. In October, 1937, he was appointed president of the Birmingham Branch of the British Red Cross, and also in 1940 Acting County Director and Controller. He developed and followed the wartime activities of the British Red Cross with the greatest interest, and in none of his public interests will he be more missed than in the councils of that body.

Beckwith Whitehouse found time throughout a busy professional life for his two hobbies of entomology and gardening, and to the last immersed himself in both of them in any spare moments he had. At his beautiful country house he found opportunities for both, but it is characteristic of the man that even there practice followed him, and his week-ends were usually partly occupied by consultations and operations at the local hospital. Unknown to most of his friends—even those who saw him daily—he had been for some time under the shadow of a possible breakdown unless he curtailed his work, but the warning was unheeded. He passed out in the flood-time of his many activities, having given abundantly throughout a long and busy life to his friends, his patients, and his profession. As one who knew him well, one feels that he would have preferred it thus had the alternative been the inactivity of invalidism. Deep in his mind, though, was the desire to enjoy for a time leisure to indulge in his hobbies in the distant future, never to be achieved, when practice could be put aside and his garden claim him.

We regret to announce the death at Chichester of Dr. A. M. BARFORD, for many years a member of the visiting staff of the Royal West Sussex Hospital and M.O.H. for the City of Chichester. Educated at Wellington College and at St. Bartholomew's Hospital, Arthur Morton Barford qualified as M.R.C.S., L.R.C.P. in 1888 at the age of 20, obtained the Brussels M.D. with honours in 1897, the Edinburgh D.P.H. in 1904, and was elected F.R.F.P.S.Glasg. in 1918. For some years after qualification he was anaesthetist to the North-West London Hospital and the Throat Hospital in Golden Square. While engaged in general practice at Chichester he specialized in oto-laryngology and was appointed aural surgeon to the Portsmouth and Southern Counties Eye and Ear Hospital, and afterwards had charge of the throat, nose, and ear department of the Royal West Sussex Hospital at Chichester; he also became chief surgeon to the West Sussex Constabulary and a member of the county council. His knowledge of public health administration was recognized by appointment as examiner for the Edinburgh and the Glasgow D.P.H. Dr. Barford joined the B.M.A. 50 years ago.

The death is reported from Suva, Fiji, of Dr. DUNCAN CAMPBELL MACEWAN MACPHERSON, Assistant Director of Medical Services, Fiji and Western Pacific. The only son of Hugh MacPherson, J.P., of Acharacle, Argyllshire, he was born in 1901. He graduated M.B., Ch.B. at the University of Glasgow in 1928, and was senior vice-president of the Glasgow University Medico-Chirurgical Society. After holding resident posts at the Newark General Hospital and the Glasgow Royal Mental Hospital he won a Fellowship in the International Health Division of the Rockefeller Foundation, and worked for a time at the Johns Hopkins University, Baltimore, which granted him its certificate of public health in 1934, and soon afterwards he obtained the D.T.M. of Liverpool. Entering the Colonial Medical Service, Dr. MacPherson worked as medical officer to the Gilbert and Ellice Islands before being transferred to Suva, where, in addition to his official post as A.D.M.S., he was lecturer in pathology, bacteriology, and forensic medicine at the Central Medical School. He had been a member of the B.M.A. since graduation.

Medico-Legal

APPEAL BY GENERAL MEDICAL COUNCIL DISMISSED

SPACKMAN CASE BEFORE HOUSE OF LORDS

The Meaning of "Due Inquiry"

The House of Lords delivered judgment on August 5 in the appeal of the General Medical Council from the decision of the Court of Appeal in the case of Dr. Eric D. Spackman of Worthing. The appeal was unanimously dismissed with costs. The report of the hearing in the House of Lords appeared in last week's *Journal* (p. 182).

Mr. Charles Harman, K.C., and Mr. Douglas Bartley appeared for the appellants on the instruction of Waterhouse and Co., solicitors, and Mr. Cecil Havers, K.C., and Mr. Henry C. Dickens for the respondent, Dr. Spackman, on the instruction of Hempsons, solicitors, who acted on behalf of the Medical Defence Union.

The LORD CHANCELLOR (Lord Simon), after recounting the facts of the case, which were sufficiently set out in the report of the hearing and also in the reports of the hearing before the Divisional Court and the Court of Appeal, said that it was not disputed that the General Medical Council, in exercising its jurisdiction, was not a judicial body in the ordinary sense; it was a master of its own procedure and was not bound by the strict rules of evidence nor subject to correction by the courts so long as it complied with Section 29 of the Medical Act, 1858. That section distinguished significantly between a case in which the practitioner against whom a complaint was laid had been guilty of felony or misdemeanour and a case in which the allegation of "infamous conduct in any professional respect" was not connected with a criminal conviction. In the former circumstances the decision of the Council was properly based on the fact of the conviction, behind which the practitioner could not properly go; but when the complaint was not connected with a conviction the decision of the Council, if adverse to the practitioner, must be arrived at, in the words of the Act, "after due inquiry"—meaning, of course, due inquiry by the Council.

The question, therefore, was whether the Council in the present case could be regarded as having reached its decision adverse to Dr. Spackman after "due inquiry," when it had refused to hear evidence tendered by the practitioner with a view to showing that he had not been guilty of the infamous conduct alleged, and that the finding of the Divorce Court, before which he appeared as a co-respondent, was wrong. This problem did not arise only in connexion with conclusions reached in divorce. Many other instances of adverse conclusions reached in a court of law might be cited—as, for example, in proceedings for slander, in judgment for the plaintiff in an action for seduction, or in a bastardy order made by a bench of magistrates—which might in certain circumstances lead to a charge against a medical man of infamous conduct in a professional respect. It seemed obvious in these other instances that, while the Council might regard the conclusion reached in the courts as *prima facie* proof of the matter alleged, it must, when making "due inquiry," permit the doctor to challenge the correctness of the conclusion and to call evidence in support of his case. The previous decision was not between the same parties; there was no question of estoppel or of *res judicata*, and while in such cases the decision of the courts might provide the Council with adequate material for its own conclusions if the facts were not challenged, if they were challenged the Council must hear the challenge and give such weight to it as it thought fit.

In the Lord Chancellor's view the same course must be taken if the practitioner challenged the correctness of a finding of adultery by the Divorce Court. The decree of that court provided a strong *prima facie* case which threw a heavy burden on the respondent if he sought to deny the charge, but the charge was not irrebuttable. This followed from the wording of Section 29, with its requirement of "due inquiry," which meant that the accused party must be given a fair opportunity of meeting the accusation. This was not to say that the Council must re-hear the whole case, though, in special circumstances, the recall of a previous witness, in the light of what the accused or his witnesses had said, might be desirable.

That there were special cases in which a finding of adultery by the Divorce Court was not to be treated by the Council as final was shown by the Council's own previous practice, for if the further evidence tendered to the Council had been evidence which could not with reasonable diligence have been put before the court, the Council would have heard it. There was really no analogy here with the exceptional cases in which the Court of Appeal admitted further evidence. The Council was not a court of appeal. The rule of the Court of Appeal was based on the view that the time to call evidence was on the occasion of the trial, and that on appeal it was normally too late to do so. In the case of the Council, while the conclusion of the Divorce Court constituted a strong *prima facie* case, the procedure should be followed which was set out in the Council's own standing orders: "The practitioner will then be called upon by the president to state his case, and to produce the evidence in support of it." If it was considered desirable to make the decision of the Divorce Court conclusive, and so prevent the possibility of a second hearing on the question of adultery, Section 29 of the Medical Act must be amended. The appeal would be dismissed with costs.

Lord ATKIN, in agreeing with the Lord Chancellor, said that the conduct alleged against Dr. Spackman

> "is conduct from which the public have every claim to be protected, and there would be none more ready to afford protection than the members of the medical profession itself. But it is obvious that the gravity of the charge does not diminish the weight of the evidence necessary to establish it; it increases it. The responsibility therefore thrown upon the General Medical Council in such cases is grave."

The practitioner charged was entitled to a judgment the result of the considered deliberation of his fellow-practitioners. They must therefore hear him and all relevant witnesses. It was true that the judgment of the High Court judge might afford *prima facie* evidence in support of the charge, for the Council was not obliged to hear evidence on oath.

> "But the very conception of *prima facie* evidence involves the opportunity of controverting it, and I entertain no doubt at all that the Council is bound, if requested, to hear all the evidence that the practitioner charged brings before it to refute the *prima facie* case made from the previous trial. If this is inconvenient it cannot be helped; it is much more inconvenient that a medical practitioner should be judged guilty of an infamous offence by another than the statutory body. . . .
>
> "Nor do I accept the view put forward on behalf of the Council that it is ill qualified to form an opinion upon such a charge as the present compared with a High Court judge. I can imagine no tribunal better qualified to draw deductions from the proved conduct between a doctor and his female patient than the very experienced body of men, for instance, who sat on the present inquiry."

Lord WRIGHT, who also concurred, said that enormous powers, which might close a man's professional career and ruin him financially and socially, had been vested in the Council by Parliament from a faith both in the members' expertness in regard to that grave issue and in their moral gravity and trustworthiness. Such was the eminence of the Council and so completely representative was it of a great profession, the honour and integrity of which were of the highest importance as matters of public policy.

After a long legal discussion of the Council's rules of procedure, Lord Wright continued:

> "I am unable to see the force of the objection urged against hearing the evidence that the Council is not a court of law or equipped with the machinery for ascertaining facts. Parliament has put the duty of inquiry upon it, and it seems to have discharged its duty for the last 85 years. Most of the cases before the Council must involve questions of fact which it has to decide as best it can; it can only be in comparatively rare cases that the cause of complaint is a matter which has been decided in a court of law other than by a conviction for felony or misdemeanour. The court decision should indeed ease that duty, because the proceedings and judgment of the court at least give the Council *prima facie* evidence which may be for practical purposes unanswerable by the practitioner. But he must surely

be entitled to deny the charge before the Council and bring his evidence if he contests the justness of the decision of the court."

He added that the Council ought to take up this inquiry again. He did not seek in any way to suggest or forecast how it should be held. The discretion and responsibility for the procedure was the Council's own.

Lords Macmillan and Romer concurred without making any observations, and, as stated, the appeal of the Council was dismissed with costs.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

A. H. Masina, M.B., B.Chir., has been approved for the degree of M.D. in absence. The Marmaduke Sheild Scholarship is awarded to Iris Kane of Newnham College.

The following have been approved at the examinations indicated:

FINAL M.B. *Part I (Surgery, Midwifery, and Gynaecology).*—D. Ainslie, J. Attenborough, A. S. Barling, W. Beautyman, S. B. Bennett, J. H. E. Bergin, V. L. Billington, L. L. Bromley, J. C. Burne, K. Chitty, M. H. Clement, W. R. Cole, R. A. D. Crawford, F. A. L. da Cunha, P. J. de Vescovi, G. H. P. Drake, H. L. English, A. M. H. Fisher, M. R. Geake, K. O. George, R. V. Gibson, A. J. Gray, J. A. Hallinan, G. Hildick-Smith, R. F. Hobson, G. M. Homan, M. C. Hudson Bennett, W. N. Ingham, J. A. Loveless, J. B. Lyon, H. A. B. Nicholls, T. Norman, R. G. F. Parker, A. N. Pearson, R. A. Peebles Brown, W. R. Probert, B. O. Reed, B. W. Rhodes, M. H. Russell, E. S. O. Smith, P. S. Smith, D. H. K. Soltau, P. G. Somerville, I. S. Staddon, P. R. Swyer, P. Venables, D. Vérel, M. M. Walker, J. Wedgwood, D. B. B. Whitehouse, H. B. Whitmore, A. J. W. Woodroffe. *Women:* M. L. Cox, I. S. King, R. S. Mitchison, M. Sidgwick.

FINAL M.B. *Part II (Principles and Practice of Physic, Pathology, and Pharmacology).*—E. L. Arnold, J. Attenborough, E. H. Back, R. A. J. Baily, H. W. Balme, D. R. Barnes, C. H. Barnett, R. F. Bates, D. L. Bridgewater, W. L. Calnan, D. J. Conway, R. P. Cook, J. Davenport, M. B. Devas, D. H. Drennan, F. H. Epstein, J. W. Fawcett, R. M. Forrester, H. A. Fraser, M. R. Geake, S. R. S. Godkin, R. N. R. Grant, H. C. Gupta, B. Haigh, J. R. Handforth, E. H. Hare, H. Harris, G. Hildick-Smith, J. K. Hinds, P. H. Huggill, E. N. M. Johnston, P. F. Jones, J. O. Laws, J. Lister, J. C. Lloyd, R. E. Loder, C. S. McKendrick, A. I. MacLeod, D. H. Makinson, N. M. Mann, P. G. Mann, A. S. Mason, R. G. May, P. H. Mitchell, P. A. G. Monro, W. J. Naunton, T. Norman, J. E. Oliver, W. J. L. Pain, R. A. Peebles Brown, J. S. Pegum, J. M. Potter, J. R. Robinson, K. C. Robinson, P. H. Rogers, L. A. Rook, P. H. Schurr, O. L. S. Scott, K. H. L. Scougall, E. L. Simons, P. S. Smith, I. S. Staddon, T. R. Steen, R. V. Stone, P. R. Swyer, J. D. Trethowan, L. R. Twentyman, G. S. Udall, D. Vérel, B. J. Webb, D. B. B. Whitehouse, E. H. Williams, P. A. O. Wilson, O. H. Wolff, W. D. Wylie. *Women:* S. M. E. Ambache, J. Hardy, M. Sidgwick, G. C. Thompson, A. B. Willcock, A. S. Willis.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

At a quarterly Comitia held on July 29, with the President, Lord Moran, in the chair, the following were elected officers for the ensuing year: *Censors*, F. S. Langmead, A. G. Gibson, G. E. S. Ward, Geoffrey Marshall; *Treasurer*, C. M. Hinds Howell; *Registrar*, H. E. A. Boldero; *Harveian Librarian*, Arnold Chaplin; *Assistant Registrar*, A. A. Moncrieff.

The following awards were announced: the Baly Medal to Prof. F. C. Bartlett, F.R.S., for his distinguished work on the science of physiology and in particular his contributions in experimental psychology; the Gilbert Blane Gold Medal to Surg. Cmdr. D. P. Gurd, R.N., and the Murchison Scholarship to Bruce Cruickshank.

Viscount Dawson was re-elected Representative of the College on the governing body of the British Postgraduate Medical School, and Dr. J. H. Towers a representative member on the Council of King's College, University of Durham. Dr. W. E. Hume will deliver the Harveian Oration on Oct. 18.

The following, having satisfied the Censors' Board, were elected to the Membership of the College:

A. O. Bech, M.B.; C. Bremer, M.D.; George Malcolm Brown, M.D.; J. W. L. Doust, M.B., R.A.M.C.; L. P. R. Fourman, M.B.; C. Raymond Greene, D.M.; Margaret E. Harker, M.B.; R. J. Harrison, M.B.; J. R. Hindmarsh, M.D., R.A.F.; P. M. Inman, M.B.; Ernest Grahame Jones, M.B.; S. J. R. Macoun, M.B.; P. J. W. Mills, L.R.C.P.; R. G. Moore, M.B.; G. O. Richardson, M.D.; R. E. Roberts, M.D.; Dorothy S. Russell, M.D.; D. S. Short, M.B.; Dorothy W. Smith, M.B.; J. C. S. Thomas, L.R.C.P.; A. S. Watts, M.B.; C. Wilcocks, M.D.; Constance A. P. Wood, L.R.C.P.

Diplomas in Ophthalmic Medicine and Surgery (twelve) and Medical Radiology (five) were granted, jointly with the Royal College of Surgeons of England, to the candidates whose names appear below in the report of the meeting of the Royal College of Surgeons of England.

Diplomas in Public Health (four), Psychological Medicine (eight), and Laryngology and Otology (three) were granted, jointly with the Royal College of Surgeons of England, to the candidates whose names appear in the report of the meeting of the Royal College of Surgeons of England in the *Journal* of July 24 (p. 122), and Diplomas in Anaesthetics (eighteen) to those whose names appear in the report of the meeting in the *Journal* of June 19 (p. 772).

ROYAL COLLEGE OF SURGEONS OF ENGLAND

At a meeting of Council held on July 29, with Sir Alfred Webb-Johnson, President, in the chair, a vote of thanks was given to the Treasurer and Masters of the Bench of the Honourable Society of Lincoln's Inn for their generosity in allowing the use of the Great Hall for the Fellowship Centenary Reception. Sir Arthur Keith was reappointed as representative of the College on the Joint Committee for Anthropological Research and Training for the period from Jan. 1, 1943, to Dec. 31, 1947. It was decided to continue the recognition of the Kent and Sussex Hospital under the F.R.C.S. Regulations, and to extend it to include the 2nd H.S. in addition to R.S.O. and 1st H.S.

Licences to practise physic were conferred upon the following 223 candidates (including 25 women) who had passed the Final Examination in Pathology, Medicine, Surgery, and Midwifery of the Conjoint Board and have complied with the necessary by-laws:

F. A. Adcock, J. Ainsworth, Sheila W. Anderson, J. K. Argo, L. E. Arundell, J. D. Auton, G. B. Barker, A. S. Barling, C. H. Barnett, A. E. Batchelor, D. C. Beatty, W. Beautyman, Kathleen N. Berger, G. R. T. Birtwhistle, W. A. L. Bowen, R. McC. Boyce, J. B. Brass, D. B. Brewer, A. J. Briggs, A. Brook, Barbara G. Bull, J. C. Burne, M. O. Carruthers, J. Carter, Margaret J. Cash, K. Chitty, C. J. Christmas, H. P. Clarke, M. H. Clement, Beatrice D. Cluley, L. H. Collier, Gladys C. Collings, D. M. Colyer, Doris E. Counsell, J. G. Coxon, F. M. Cryer, J. H. Cule, K. G. Cuming, P. N. Cunliffe, Rosalind M. L. Darby, J. C. A. Davies, T. M. Davies, T. Davies, W. Davies, Winifred M. Davies, M. B. Devas, G. de Vesselitsky Merriman, Sheila Donahue, D. C. Dougherty, M. A. C. Dowling, D. C. H. Draffin, Margaret Duncan, P. V. C. W. Dupré, B. J. McD. Duxbury, E. M. Edwards, B. H. Egerton, G. S. Emtage, G. P. Enoch, F. H. Epstein, D. M. Evans, H. Fakim, A. Feldman, J. A. Fewings, M. M. Figgis, M. A. Filose, O. D. Fisher, F. Fletcher, K. W. Forber, D. V. Foster, W. Fox, H. A. Fraser, A. G. Freeman, R. J. T. Gardiner, M. R. Geake, R. V. Gibson, T. J. Gilmore, H. Goldberg, G. Goodall-Copestake, A. W. G. Goolden, R. H. Gorrill, R. L. A. Gouges-d'Agincourt, S. H. Gould, B. Green, W. H. Greenwood, I. L. Gregory, A. P. Grimbly, H. C. Gupta, D. L. Guthrie, R. M. Harvey, D. E. Hayes, J. S. Hayward, M. Hemming, J. Henneman, S. P. Higham, G. Hildick-Smith, G. F. Hird, C. A. Hodge, Monica M. Hogben, H. Holden, G. M. Homan, P. Hopkins, M. C. Hudson Bennett, G. E. Hughes, E. A. J. Imossi, W. N. Ingham, F. James, G. A. James, C. W. L. Jeanes, Ursula Jerram, R. E. W. Jesson, H. D. Jesudason, G. M. Jewson, A. G. Jones, B. V. Jones, L. G. G. Jones, D. A. G. Kaye, A. R. Kenderdine, S. M. Kingsley, R. F. S. Kirkham, G. Kohn, C. D'A. Laidlaw, J. W. Langley, R. W. Lawrie, W. F. Leith, M. Leven, C. L. Lewis, E. H. Lewis, Gwenda M. Lewis, J. Lister, R. H. Little, Renate M. E. Loeser, J. B. Lyon, I. MacQ. MacArthur, M. D. McCready, N. G. McGuire, D. H. Mackenzie, R. M. MacPhail, A. K. Mant, H. L. Massiah, C. Maxwell-Muller, J. B. Mee, J. B. Mehta, H. P. Merrick, Margaret E. Milter, L. L. Mistlin, J. B. Mitchell, A. J. Moon, A. Morgan, Gwenllian B. Morgan, Ivy M. Morgans, J. S. J. Morley, J. D. Morris, F. G. Morse, M. V. Mulye, A. P. M. Nicol, Peggy K. L. Orton, B. G. Paul, A. N. Pearson, W. E. R. Pitt, Betty J. Poland, K. I. Price, K. J. Randall, B. O. Reed, J. M. Rees, M. F. Remy, B. W. Rhodes, P. G. Roads, B. V. Robinson, K. C. Robinson, C. Romer, A. J. F. Saxton, K. H. L. Scougall, R. H. Sewell, H. M. G. Shanly, S. S. Short, B. S. Skinner, A. N. Smith, G. B. Smith, R. S. Smith, I. S. Staddon, C. S. M. Stephen, D. M. Stevens, Janet A. M. M. Stevenson, R. H. Stillman, A. Stone, T. J. Swaffield, P. E. Sylvester, J. L. Taylor, G. A. Terry, G. D. Thomas, Greta C. Thompson, W. G. Thomson, Cecily M. Tinker, S. Tischler, W. H. Townsend, W. Townsley, J. Tregillus, C. E. Tudor, R. W. Tudor, G. E. E. Usher Somers, S. B. van der Merwe, E. G. Wade, M. T. Wade, J. Waldman, M. F. C. Walker, E. L. Ward, P. F. A. Watkins, R. Webb, J. O. M. Wedderburn, W. G. White, J. P. Whitehead, J. P. S. Whitehead, Marjorie Whitney, H. S. C. Wight, R. R. L. Wild, Audrey S. Willis, J. S. Winter, R. J. T. Woodland, A. J. W. Woodroffe, R. M. Woodside, F. Wrigley, W. D. Wylie, D. E. Yates.

Diplomas were granted, jointly with the Royal College of Physicians of London, as follows:

DIPLOMA IN ORTHOPAEDIC MEDICINE AND SURGERY.—J. H. Austin, H. Bannerman, M. K. Fleischer, A. Holmes-Smith, W. Ingman, W. H. R. Jeremy, H. Kirchenberger, R. S. MacLatchy, W. M. Rich, D. J. N. Smith, A. Stanworth, E. S. Tan.

DIPLOMA IN MEDICAL RADIOLOGY.—E. M. Japha, H. G. Jones, Kathleen J. Mulvany, G. B. Stanford, E. M. Ungar.

The Services

The *London Gazette* announces the appointment to M.B.E. (Civil Division) of Dr. John Hyde, ship surgeon. The announcement reads: The ship was lying at Port Darwin when the port was subjected to a heavy air attack by Japanese aircraft. During the attack the vessel sustained direct hits, was set on fire, and eventually blew up. In addition the wharf to which she was moored was set on fire and an oil pipeline was cut which caused oil to spread on the surface of the sea around the ship. The ship's surgeon displayed outstanding gallantry and devotion to duty throughout. He continued to attend casualties while the vessel was under attack and remained on board to the last moment without thought of his own safety. Later he helped to take the wounded ashore through the oil which was spreading over the sea, and but for his courageous efforts many lives would undoubtedly have been lost.

CASUALTIES IN THE MEDICAL SERVICES

Missing at Sea.—Major R. A. Foucar, R.A.M.C.

Medical Notes in Parliament

Constitution of Appeal Tribunals

Consideration of the Pensions Appeal Tribunal Bill was resumed by the House of Commons in Committee on July 22. Sir WALTER WOMERSLEY moved amendments to implement the new conditions announced in the White Paper which set out alterations in the Royal Warrant. These amendments were accepted.

Sir DONALD SOMERVELL moved an amendment providing that there should be a right of appeal from an interim assessment, and that this right of appeal should arise at the expiry of two years from when the man was notified of the interim assessment. He said these cases were under constant administrative review. Whenever a man complained that his circumstances had been worsened there was a new medical board or examination. Dr. HADEN GUEST asked the number of medical men on a tribunal in the Minister of Pensions' own assessment tribunals. Sir WALTER WOMERSLEY replied that the body was a board, not a tribunal. It always included two medical men at any rate. He would not consent to one. The House agreed to Sir Donald Somervell's amendment.

Sir DONALD then moved an amendment providing that when the appellant or a Minister was dissatisfied with the decision of a tribunal on a point of law an appeal might be allowed to a High Court judge. The amendment was accepted.

On the clause dealing with the constitution of appeal tribunals, the committee rejected a proposal that medical men should be attached to the tribunals as assessors and not as members. It accepted an amendment, moved by Sir HENRY MORRIS-JONES, that the medical referees on the tribunals should be practitioners of not less than seven years' standing. A further amendment was made to provide that a tribunal would have power to show to a man's medical adviser documents about his condition.

The committee stage was completed.

Health of Scottish School Children

Presenting, on July 21, the Education Estimates for Scotland, Mr. TOM JOHNSTON said that owing to the war it was not possible to insist upon the usual routine medical examinations of school children. What examinations had been made showed no deterioration in nutrition. On the contrary there was evidence of actual betterment. Of one-third of the school children of Lanarkshire (26,756), only 42 were shown as suffering from "bad" nutrition—an improvement on the previous year. Renfrew County disclosed only 20 out of 12,655 children suffering from "bad" nutrition; and Ayr County 14 out of 14,256 children. In 1942 boys at age 13 were 2½ lb. heavier and girls at age 15 over 2 lb. heavier than boys and girls of these ages in the 5 years before the outbreak of war. Lice, itch, and skin disease were found among no inconsiderable sections of the population. In Glasgow the local authority was making strenuous efforts to stamp out these body infestations and to foster habits of personal cleanliness and hygiene. At some 17 selected schools it had appointed senior women teachers to supervise operations. The consent of the parents and the interest and co-operation of the child were first secured for treatment, and the results achieved were remarkable. Reports from one school showed:

	Verminous	Nitty
December, 1940	14%	56%
March, 1941	6%	39%
May, 1941	3.5%	12%

Glasgow Education Authority proposed to develop these arrangements. Girls were the worst offenders in vermin infestation of the head, a reason being the present custom of wearing the hair long.

Diphtheria and Scarlet Fever Incidence and Deaths

Mr. ERNEST BROWN furnished the following tables on July 22. They are for England and Wales:

Year	Notifications	Deaths (Under Age 15)	Deaths (Over Age 15)
Diphtheria			
1938	65,008	2,687	174
1939	47,341	1,982	151
1940	46,281	2,300	180
1941	50,797	2,390	251
1942	41,404	1,635	191
Scarlet Fever			
1938	99,274	237	74
1939	78,101	129	52
1940	65,302	106	48
1941	59,432	98	35
1942	85,084	104	

Midwives' Salaries

Mr. ERNEST BROWN announced on July 22 that he had accepted the recommendations of the Rushcliffe Committee on Midwives Salaries, and had commended them to local authorities for adoption as from April 1 last. The total annual additional cost was likely to be at least £500,000. In the case of midwives employed in institutional midwifery, the Ministry would make a grant to local authorities and voluntary hospitals of 50% of the additional expenditure incurred. To qualify for this grant an authority must adopt the committee's proposals in full. In the case of midwives employed in the domiciliary service the additional expenditure would be covered by the statutory grant provisions in the Midwives Act of 1936.

Increased Compensation for Workmen

Mr. HERBERT MORRISON on July 28 said the Government had had under consideration the claims put forward for increasing the rates payable under the existing Workmen's Compensation Acts. After discussions with the Trades Union Congress and the British Employers' Confederation it had decided to submit a Bill to Parliament embodying certain increases. These were intended to be of a temporary nature and were without prejudice to the introduction of a revised scheme of workmen's compensation which the Government had under consideration in relation to the Beveridge report. The Bill would be introduced forthwith. If there was a sufficient measure of agreement, it was hoped to take it on an early day after the House resumed after the recess.

Alien Doctors in the Colonies

The Secretary of State for the Colonies stated on July 28 that a shortage of qualified doctors had occurred in some Colonies, mainly as a result of secondments for military service, and a number of Colonial Governments had, under powers conferred by the Emergency Powers (Colonial Defence) Order in Council, extended recognition to alien doctors on lines corresponding generally to those permitting such doctors to practise in this country.

Artificial Insemination

Lord BRABAZON in the House of Lords on July 28 drew attention to the consequences of insemination on livestock and to its possibilities in the human race. In America, in childless marriages where the husband was sterile, there was a great demand that the wife, rather than adopt a child, should be inseminated by an unknown father and should produce a child herself. It was estimated that there were in the United States 10,000 applications of that kind. If the child was to be produced by another father the progeny might be looked upon by the world as legitimate, though the doctor would know it was illegitimate. Care and surveillance were needed of that development. There were women who would like to have children without marrying and without sinning. That development would have to be considered. The lawyers would be interested in the extraordinary experiment of the insemination of a female after the male had died.

Lord GLENTANAR said that not only was the artificial insemination of the female being studied but the process of transplanting the ovum of a female into the uterus of another female was also being experimented with, as also the division of the semen into its male and female elements for the purpose of sex determination. If the last practice became practical, profound sociological results might occur. Viscount BLEDISLOE urged the Government to turn its attention to accelerating the process of supplying animal semen for post-war rehabilitation of agriculture in Europe. Two Government stations—at Cambridge and Reading—had been established for producing semen under careful supervision. Artificial insemination of stock had gone on for several years in Denmark and to some extent in this country in reproduction of thoroughbred horses. The BISHOP OF CHICHESTER thought the relationship between the sterile husband and the artificially inseminated wife would be anxious and unhappy. The DUKE OF NORFOLK, as Joint Parliamentary Secretary of the Ministry of Agriculture, said the human part of the subject was being closely watched by the Minister of Health, who, if and when it became a live issue in this country, would consult the Lord Chancellor on the legal problems which were raised. The animal side of artificial insemination was started by the Arabs many hundred years ago. They used it with some success in the breeding of horses. Modern methods provided a means of improving livestock in a way hitherto impossible. In-breeding was a danger which came to mind. Strict control of the practice was necessary.

Notes in Brief

It is intended to arrange for the collection of haws as well as rose hips this year; haws have a certain medicinal value.

Medical News

The Chartered Society of Massage and Medical Gymnastics will hold its annual Congress on Friday and Saturday, Sept. 24 and 25, in the Great Hall of B.M.A. House, Tavistock Square. The lectures and demonstrations are open to all medical practitioners. The first day's programme includes lectures by Dr. R. D. Langdale Kelham on "The Preparation of Amputation Stumps for Limb Wearing from the Point of View of the Physiotherapist," by Lieut.-Col. St. J. D. Buxton on "Physiotherapy in the Middle East," and the Founders' lecture by Brigadier F. D. Howitt on "The Widening Horizon." On Saturday morning there will be lectures by Mr. R. Watson-Jones on "Rehabilitation, Physiotherapy, and Orthopaedics," and by Dr. J. L. Livingstone on "The Work of a Chest Unit." In the afternoon there will be demonstrations. Applications for tickets, price 1s. 6d. each lecture to non-members, should be made to the assistant secretary, C.S.M.M.G., Tavistock House, Tavistock Square, W.C.1.

A joint conference on "The Administration of the Health Services," arranged by the Institute of Public Administration and the National Association of Local Government Officers (Metropolitan Area Education Committee), will be held at County Hall, Westminster Bridge, S.E., on Saturday afternoon and Sunday morning, Sept. 11 and 12. The speakers will be: Dr. W. Allen Daley, Medical Officer of Health, L.C.C. (chairman); Prof. R. M. F. Picken, M.B., of the Welsh National School of Medicine; Mr. Norman Wilson, M.A.; Dr. J. A. Scott, Medical Officer of Health, Fulham; and Dr. Charles Hill, Deputy Secretary, British Medical Association. Further details will be announced later.

The Society for Experimental Biology is holding a Conference on Wound Healing at Cambridge from Sept. 22 to 24. The council of the society invites members of the British Medical Association to attend the conference. Papers will be given by both clinical and laboratory workers. Those wishing for further details of the programme, accommodation, etc., should write to Prof. T. A. Bennet Clarke, Department of Botany, University College, Nottingham.

Hull is to have a medical provident fund enabling subscribers with incomes higher than those fixed for the local contributory scheme to provide for hospital and nursing home charges, surgeons' fees, etc. The upper income limits of the fund are £450 for a single person and £550 for a person with one dependant to £750 for a subscriber with three dependants. Details may be obtained from the secretary at the Hull Royal Infirmary.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* the notifications of measles fell by 568, and of dysentery by 55—these being the only changes of note during the week.

For the sixth consecutive week the incidence of measles has fallen, the total now being about one-eighth of the spring maximum. In Monmouthshire, Dorset, Surrey, and Glamorganshire there were recorded respectively 101, 65, 59, and 50 fewer cases than in the previous week, but there were 33 more in Montgomeryshire.

The notifications of whooping-cough, which fell by 29 for the whole country, fluctuated widely in the counties. The largest of the local variations were increases in Durham 50 and Glamorganshire 32, and decreases in Warwickshire 61, Leicestershire 34, and Staffordshire 30. The county totals for scarlet fever were fairly constant, a drop in Essex of 52 and a rise in Middlesex of 30 being the only variations of note.

The reduction of 55 in the incidence of dysentery was due mainly to the fact that no further cases were recorded from the outbreak in Kent, Eastry R.D., where there were 49 cases last week. Although the notification of dysentery remains fairly high, there are no very large centres of infection; Lancashire reported 14 cases, and London 13.

The weekly total of 44 for cerebrospinal fever is the lowest since the end of 1939.

In *Scotland* a rise in the already high incidence of dysentery was due to increases in existing outbreaks, the cases in West Lothian County mounting from 39 to 50 and in Edinburgh from 12 to 22. The largest of the other outbreaks were Aberdeen 14, and Kincardine County 15. There was a rise in diphtheria in the North-Western area and in Glasgow, where 60 of the 136 cases occurred.

The Week Ending July 31

The notifications of infectious diseases in England and Wales during the week included: scarlet fever 1,979, whooping-cough 1,896, diphtheria 609, measles 2,262, acute pneumonia 432, cerebrospinal fever 47, dysentery 99, paratyphoid 10, typhoid 13.

No. 29

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 24.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1943 (a)	(b)	(c)	(d)	(e)	1942 (Corresponding Week) (a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	44	3	22	—	3	89	4	25	1	4
Deaths		—	1				—	1		
Diphtheria	591	38	136	62	16	710	35	156	65	14
Deaths	12	—	1	3	—	13	—	3	—	—
Dysentery	105	13	139	—	—	101	24	61	—	—
Deaths				—	—			—	—	—
Encephalitis lethargica, acute	6	1	—		—	2	—	3	1	—
Deaths		1					—	—		
Erysipelas			37	7	2		—	47	3	1
Deaths		—					—	—		
Infective enteritis or diarrhoea under 2 years				34					84	
Deaths	46	6	7	18	11	49	7	15	9	3
Measles	2,486	135	41	16	10	6,817	695	209	40	142
Deaths	1	—	3	—	—	4	1	2	—	1
Ophthalmia neonatorum	77	4	14	—	—	110	3	17	1	—
Deaths										
Paratyphoid fever	9	1	1	—	—	11	—	3	—	—
Deaths	—		—		—	—	—	—	—	—
Pneumonia, influenzal*	445	24	2	—	3	479	12	4	—	3
Deaths (from influenza)	5	—	—	1	—	3	1	—	—	1
Pneumonia, primary			166	6				153	19	
Deaths		19		6	8		—		5	6
Polio-encephalitis, acute	—	—				5	—			
Deaths		—					—			
Poliomyelitis, acute	5	1	3	3	—	12	1	—	2	—
Deaths		—					—	—		
Puerperal fever		3	14		—	—	4	5	1	1
Deaths							—			
Puerperal pyrexia†	152	13	18	2	3	154	17	20		3
Deaths		1								
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	2,099	211	189	44	34	1,516	80	242	37	35
Deaths	—	—	—	—	—	—	—	—	—	—
Small-pox	—	—	—		—	2	1	11		—
Deaths				—	—	—	—	—	—	—
Typhoid fever	10	—	—	14	—	10	1	1	8	2
Deaths	2	1	—	—	—	1	—	1	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths				—	—			—	—	—
Whooping-cough	2,081	121	53	22	53	1,125	105	13	57	12
Deaths	6	—	4	1	1	6	2	—	1	—
Deaths (0–1 year)	275	42	55	42	34	296	38	72	43	17
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	3,613	536	521	175	101	3,652	500	568	170	108
Annual death rate (per 1,000 persons living)			11·7	11·5	‡			12·8	11·3	‡
Live births	6,677	774	1,005	368	313	6,028	708	894	347	307
Annual rate per 1,000 persons living			20·5	24·2	‡			18·5	23·4	‡
Stillbirths	195	18	28			207	23	39		
Rate per 1,000 total births (including stillborn)			27					42		

* Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

† Includes puerperal fever for England and Wales and Eire.

‡ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1.

ORIGINAL ARTICLES AND LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated.

Authors desiring REPRINTS should communicate with the Secretary of the Journal Board, B.M.A. House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

ADVERTISEMENTS should be addressed to the Advertisement Manager (hours 9 a.m. to 5 p.m.). Orders for copies of the *Journal* and subscriptions should be sent to the Secretary.

TELEPHONE NO.—B.M.A. and *B.M.J.*: EUSTON 2111.

TELEGRAPHIC ADDRESSES.—EDITOR, *Aitiology Westcent, London*; SECRETARY, *Medisecra Westcent, London*.

B.M.A. SCOTTISH OFFICE: 7, Drumsheugh Gardens, Edinburgh.

ANY QUESTIONS?

Vaccines for Common Cold

Q.—*There is apparently evidence that immunity to typhoid may be obtained by the use of oral vaccines. From time to time one also sees it recommended that oral vaccines are effective for protection against the common cold. What is the present expert bacteriological opinion on the value of prophylaxis against the common cold with vaccines (a) injected in the usual way, and (b) taken by mouth?*

A.—The "common cold," like "influenza," is probably a convenient term to cover a variety of clinically similar conditions of diverse aetiology in the upper respiratory tract. There is good experimental and epidemiological evidence that a filterable virus is a causal agent of the common cold, but unfortunately this virus is very difficult to grow artificially, so that a vaccine of it—such as is now available for influenza A—cannot be prepared. On the assumption that certain bacteria like the pneumococcus, haemolytic streptococcus, influenza bacillus, and the catarrhalis group are, either primarily or secondarily, causally related to coryzal infection, stock vaccines of these organisms have been prepared and used prophylactically. In controlled trials, both here and in America, these vaccines, given in three or more weekly injections in the autumn, have failed on statistical analysis to reduce the incidence of the common cold.

Regarding the use of oral vaccines, the evidence that they are effective in protecting against typhoid is flimsy; certainly they do not provoke antibody formation to anything like the same extent as subcutaneous injection of T.A.B. vaccine does. And if there is anything in Besredka's idea of local immunity, sprays or inhalations of anticold vaccines would probably be more effective than oral administration. There is thus no scientific support for the belief that anticold vaccines, given prophylactically either by injection or by mouth, will reduce the incidence of colds in, for example, a group of factory workers.

Unilateral Parkinsonism

Q.—*Is there any treatment for the relief of tremors in one arm due to Parkinsonism? Benzedrine and hyoscine have not been effective.*

A.—It is likely that tremor of one arm of a Parkinsonian type is caused by a lesion of the basal ganglia of one side, unrelated to encephalitis lethargica. Though unilateral tremors do occur in the post-encephalitic syndrome, they are not very common. Putnam in New York has treated many of these patients with some degree of success by unilateral chordotomy, but the tremor has to be very incapacitating to justify so radical a procedure. His views are summarized in a chapter on the surgical treatment of post-encephalitic symptoms in Neal's *Encephalitis*, 1942. The most successful symptomatic treatment of the tremor is by increasing doses of belladonna. The evidence that the treatment by Bulgarian belladonna, first reported in 1935, is more effective than that by other forms of belladonna has been accepted by many, but really critical comparison between it and other methods of administration do not show any convincing difference in results. Belladonna should certainly be tried, and tried in increasingly large doses, depending upon the patient's tolerance, which varies enormously. The dose, small to begin with, should be increased until there is maximal improvement or until signs of intoxication, such as dryness of the mouth or paralysis of accommodation, occur. After this it should be reduced until the side-effects are not unpleasant or until there is evidence that the tremor is not being controlled. It is quite impossible to state an upper limit for the dose of atropine in these subjects. Kleeman (1929) recommends one minim of 1/2% solution of atropine three times a day, increasing by one minim twice daily until an optimal dose is reached. Care should be taken to see that the patient has not glaucoma, but some will tolerate up to 30 minims a day. It is worth while using stramonium or hyoscine in conjunction with the belladonna.

Mycotic Nails

Q.—*Two patients, the mother aged 70, the son aged 42 (in the R.A.M.C.), suffered for two years and four years respectively from mycotic infection of three nails of one hand. They have had all sorts of treatment, including x rays, from specialists in London and the Provinces, but without benefit. The son, now in the Middle East, is told that the heat there is bad for the complaint. Is there any satisfactory treatment?*

A.—Long-standing ringworm infection of the nails presents a most difficult therapeutic problem because the nail-plate is an impenetrable barrier to a fungicide. Removal of the infected nails is the obvious preliminary step, and then the matrix should be thoroughly cauterized with phenol liq. and a dressing of iodex containing 10% thymol applied. After a week of this ointment, 2% of dithranol in vaseline should be used until local intolerance indicates a return to iodex or to Whitfield's ointment, and if the nail bed becomes macerated under grease it may be covered with dressings of 2% aqueous gentian violet. A milder fungicidal ointment, paste, or paint should be applied nightly until the nail is fully grown. Unless the nail groove is fully cauterized at the operation and is afterwards packed with iodex a relapse under the new nail-plate is likely to occur. Conservative methods usually fail, and success depends upon the subungual penetration of a potent fungicide to the limits of the infection. This entails a daily excavation beneath the free edge of the affected nails, cutting away the plate when it obstructs progress, and then a careful application of a paint of phenol liq., thymol, and iodine, equal parts of each, applied with a pointed stick so that the liquid fills the subungual space, which is daily extended to receive it. Tincture of iodine or undiluted dettol will serve as less caustic applications.

Liver Extract Intravenously

Q.—*Is there any disadvantage or otherwise in giving parenteral liver intravenously for pernicious anaemia? I have several patients under my care with this condition, and they all prefer the intravenous route to the more painful intramuscular one, in spite of the slightly unpleasant reaction—bitter taste in the mouth and marked flushing of face—which follows intravenous injections. I know that the intravenous route is used for the severer cases at the beginning of treatment, but I wonder if it might be excreted rather quickly in this manner.*

A.—Most observers are of the opinion that the reactions after intravenous injection of liver are more unpleasant than after intramuscular injection. They comprise chills, febrile reaction, fall in blood pressure, and a greater danger from allergic responses if sensitization occurs. There is no information about the relative rates of excretion.

Lag Sugar Curve

Q.—*Two years ago a lawyer, then aged 46, was rejected for insurance because of glycosuria. A younger brother of his had died of diabetes at the age of 18, and also an uncle at the age of 50. The patient's glucose tolerance curve at the time of rejection was of the "lag storage" type. In the interval up to now he has carried on with his food as usual, and he had a recent glucose tolerance test done which was again of the "lag" type. Am I justified in telling him not to bother with further glucose tolerance tests? What is the cause of this type of curve, and what does it signify? What sort of a prognosis does it carry in a man with such a family history?*

A.—A "lag" or "steeple" curve means that the stomach empties more rapidly than usual, as happens, for example, after gastro-enterostomy, and the sugar reaches the blood stream more quickly than usual. It is probable that the insulin is not released quickly enough and the blood sugar rises to over 230 mg. per 100 c.cm. blood or so after half an hour, but the supply of insulin is adequate and the blood sugar falls to normal very quickly. The prognosis in uncomplicated cases is excellent, but the patient is just as likely as anyone else, but no more likely, to develop diabetes in the course of time. In this case the strong family history suggests that the patient may develop diabetes sooner or later. It is unnecessary to repeat the sugar tolerance test if the total sugar excreted in the 24 hours on a full carbohydrate diet is estimated once or twice a year. If the output increases the sugar tolerance test should be repeated.

Renal Function Tests

Q.—*Can modern renal function tests be used to distinguish between glomerular and tubular damage, and, if so, what is their practical application in clinical medicine? Perhaps a general statement could be given shortly, and the details of the most useful tests be supplied, in another issue of the* JOURNAL.

A.—The estimation of the clearances of inulin and diodrast, as shown by Homer Smith in his book *The Physiology of the Kidney* (1937) and in subsequent papers, enables us to determine the rate of glomerular filtration, the renal blood flow, and the amount of functional tubular tissue. The technique requires intravenous infusion, continuous catheterization, and difficult chemical analyses, and is therefore not suitable for use in ordinary routine work. The main clinical application of those tests has been in the study of renal function in conditions such as hypertension, pregnancy, haematemesis, shock, and dehydration. It would probably be fair to say, however, that as a result of these studies there has been a distinct decline in the popularity of less specific tests, such as the urea-concentration and the water-excretion tests, except in so far as they may be used empirically for the determination of prognosis in diseases of the urogenital system. Treatment in renal disease can be adequately controlled by examination of the urine, the blood pressure, and the blood chemistry, without resort to special functional tests.

Tests for Hypogonadism

Q.—*How far can one diagnose hypogonadism in male and female by biochemical investigation? For example, I have seen it stated that estimation of the blood cholesterol and of the hormone content of urine can be used as indicators of this condition. Are such tests reliable, and can they be used as a guide to treatment?*

A.—Biological investigations are of little help in diagnosing hypogonadism. Estimation of blood cholesterol can be used as an indication of thyroid function, being raised in myxoedema and lowered in thyrotoxicosis. Examination of the hormone content of the urine, however, is helpful, especially in the male. The normal range of androgens expressed as 17-ketosteroids is 3.5 mg. to 15 mg. daily for men. In hypogonadism they may be very low or in the lower range of normal, so that the differentiation from normal is not necessarily absolute. However, patients with psychological impotence usually show normal values for androgens. In the female the question is less easy; the assay of oestrogens is not so well standardized as that of androgens, and the ranges of normal values are not only wide but variable, according to the phase of the cycle.

Doubtful Wassermann

Q.—*Recently in a series of cases of blood examinations for a panel of blood donors in a voluntary blood transfusion scheme the Wassermann test in four cases was reported "doubtful"—the readings being +1; +2 weak; +2 strong; +1 weak. Are those bloods unsuitable? In the case marked +2 strong there was a suggestive history of contamination; in none of the others was a history obtainable and family history appeared clear. Do any of these cases indicate, from the Wassermann alone, grounds for instituting treatment?*

A.—A "doubtful" result of a Wassermann test means that it was neither negative nor positive and suggests the advisability of further investigation of the patient, both clinical and serological, with a view to excluding or establishing a diagnosis of syphilis. A blood which gives a doubtful reaction should not be used for transfusion, at all events until it is certain that any *Treponemata pallida* which might be present are dead. It is said that these organisms die if the blood is stored at a low temperature for 48 hours. In none of the cases mentioned does the result of the Wassermann test alone justify the institution of antisyphilitic treatment.

Gonococcal Proctitis

Q.—*I have two patients suffering from gonococcal proctitis, which has failed to respond to both sulphapyridine and sulphathiazole. Although acute symptoms have subsided for over a year, bacteriological signs are still positive. Is there any record of sulphaguanidine being effective in these cases? Although apparently highly effective in some Salmonella infections, I should be interested to know if it has any effect on the gonococcus.*

A.—There is no evidence to hand that sulphaguanidine is effective against the gonococcus, especially when sulphapyridine and sulphathiazole have failed. The cases quoted are very remarkable and raise the suspicion that (*a*) there was repeated reinfection, possibly from the vagina if the cases were females, or (*b*) the bacteriological findings were at fault; gonococci are not always easy to find or to exclude, whether by smears or cultures, in specimens taken from the rectum. Sulphadiazine sometimes succeeds where other sulphonamides have failed.

INCOME TAX

Purchase of Books

G. B. is assessed under Schedule E as an assistant. He has forwarded a list of books he has bought, and states that the inspector of taxes has refused to allow the cost (£9) as an expense. Is this correct?

*** There is ground in the strict rule applying to assessments under Schedule E for the inspector's view. That rule restricts the allowance of the expenses of employment to sums expended wholly, exclusively, and necessarily "in the performance of the duties" of the employment. It is possible that if it were a condition of G. B.'s employment that he should purchase such books as were necessary to keep his professional knowledge up to date the inspector might allow a deduction, but even then he would probably regard as "capital" outlay, therefore as inadmissible, books acquired to form a reference library rather than to keep it up to date.

War-damaged House and Property Tax

"INQUIRER" owns a house which was vacant for 1942-3 and is likely to remain vacant for some time. It has "received war damage (£80) and requires £100 for internal and external decorations and repairs in order to make it habitable." £40 has been assumed to be his annual income from the house.

*** If the furniture has been removed from the house the premises should be claimed as being "empty" and the income accordingly regarded as extinguished for the period from the date of removal. Further, if the condition of disrepair owing to war damage renders the house uninhabitable the premises can be claimed as empty—notwithstanding that furniture may remain there—until the defects have been sufficiently remedied as to render the house habitable. We understand that if the house is only *partly* inhabitable the Revenue authorities will allow as regards income tax any proportion of liability which has been applied to payment of local rates.

LETTERS, NOTES, ETC.

Vitamin Therapy in Peptic Ulcer

Dr. J. J. O'MULLANE (London, S.E.2) writes: For seven months I have been prescribing vitamins for peptic ulcer. Treatment for this condition should be: (1) dietetic, (2) medicinal. Diet should be full and should be rich in foods containing the vitamin B_1 and B_2 complex—i.e., peas, beans, lentils, yeast, or marmite. Medicinal treatment consists of vitamins A, B, C, and liver extract: 50,000 I.U. of vitamin A per day; one ampoule B_1 (25 mg.) subcutaneously once or twice a day—depending on need—until saturation, a rough index of which is the smell of burnt rubber in the urine; ascorbic acid 400 mg. a day and 2 c.cm. of hepastab forte. With some reservations regarding diet when the condition is acute this method, in my opinion, should be the treatment for peptic ulcer. Compound vitamin pellets and capsules were first used, the formula being as follows: Pellets: A, 2,500; B_1, 160; C, 250; D, 250. Capsules: A, 5,000; B_1, 50; C, 200; B_2, 20; D, 500. Six pellets a day yielded 960 units; six capsules a day yielded 300 B_1 units. The pellets proved to be much more effective than the capsules. Some cases did very well; some did not. One of the causes of failure was adherent ulcers to liver or pancreas; four cases were revealed by resection; altogether there were five such cases in nine months in one practice. Another cause was faulty technique, insufficient dosage, lack of experience, and lack of proper facilities and amenities in general practice.

Stilboestrol in Petit Mal

Dr. A. MINABBAWY (Ilford) writes: I was interested to read about the two cases of petit mal reported (July 17, p. 93). This reminded me of a patient who had the same trouble three years ago. She was treated with luminal and pot. brom. mixture, with no success. When I saw her four months ago I realized the fact that she started the symptoms one year after the menopause. I gave her stilboestrol and reduced the luminal tablets to two 1/2-gr. tablets a day. I am pleased to say that she has had no fits since. Admittedly the two cases reported were not exactly the same, but I think that the use of stilboestrol in their case is worth trying.

Supply of Prepared Bran

The KELLOGG COMPANY OF GREAT BRITAIN LTD. write: We have read with interest the letter of Dr. F. Parkes Weber in the *Journal* of July 17. We would like to bring to your notice that a decision has been reached by the Government Department concerned that "all-bran" be released from the restrictions of the zoning scheme relating to other cereal breakfast foods, and the product will therefore be available throughout the country. Supplies are again being distributed in the area affected by zoning without delay.